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Preservation and Recreation Orientations of Visitors to Dinosaur and Writing-on-Stone Parks, Alberta

by

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ABSTRACT

The preservation-recreation distinction has general relevance for recreation resource planning and management. Using a behavioural approach, this study has undertaken to apply this dimension to the investigation of visitors' orientations toward park resources.

The study sites for the project were Dinosaur and Writing-on-Stone Parks, Alberta, two Provincial Parks having resources of outstanding national or international value, as well as regional recreational potential. A principal consideration in the planning of the two parks was the relative weighting to be given to protection of park resources and visitor use of those resources, and the study was intended to provide an indication to planners of visitors' views on this issue.

Two objectives of the study were to determine the overall preservation-recreation orientations of visitors to each park, and to compare these orientations across the two parks. Three indicators were employed to study these orientations: perceptions of park purpose; activity preferences; and, preferences for management programmes. It was determined that the majority of Dinosaur and Writing-on-Stone Park visitors expressed a preservation orientation, while a smaller proportion expressed a recreation orientation. When comparisons were made for the two parks, it was found that Dinosaur Park visitors were more likely to report preservation activity preferences,

while Writing-on-Stone respondents were more likely to favour activity and management preferences of a recreational nature.

A further objective was to determine if variations in preservation and recreation orientations were related to socio-demographic and visit characteristics of the park visitors. These relationships appeared to be strongest for activity and management preferences, with weaker support for the relationships of socio-demographic/visit factors to perception. Variations in activity preference and management preference orientations were found to be associated with location of residence, age, education, income, social group type, visit-type, visit frequency, and type of destination. Variations in perceptions were related to location of residence, age, and type of group. The differences in overall orientations reported for the two parks were found to be related, in part, to survey population profile differences, and the relative proportions of strong preservation and strong recreation-oriented visitors at each park.

The degree of association between the three indicator variables was also assessed through correlational analyses. Moderate correlations, were found for the variable pairs, activity preferences and management preferences, and perceptions of park purpose and activity preferences; while the association of perceptions and management preferences was weak. These variable relationships were incorporated

into a proposed model.

The behavioural type of information gathered in this study constitutes one type of knowledge base to be considered in outdoor recreation planning, and the preservation-orientation distinction constitutes one dimension on which recreationists' views and behaviours may vary. The results of the study alert planners to variations in user group perspectives in relation to the preservation-recreation issue, and, in doing so, may contribute to the development of planning concepts which are more sensitive to the needs and views of the park-user clientele.

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I. PLANNING AND BEHAVIOURAL RESEARCH

A. Introduction

Planning has been defined as the "process whereby man deliberately sets out to influence . . . his environment so as to improve the quality of his life" (Burton, 1976:53). This approach implies an understanding of man-environment relationships (Gold, 1972), and an awareness that the principal objective of land management is to provide sustained benefits for people (Wager, 1977). In the outdoor recreation context, many researchers and managers view these benefits in terms of quality experiences for the user-clientele, and believe that a major objective of recreation management is "to provide maximum satisfaction to the public within the limits of certain resource, policy, and budgetary constraints" (Lime, 1972: 198). In order to facilitate the provision of experiences which are satisfying and beneficial for recreationists, recreation planners and managers must have an understanding of the characteristics, needs and demands of recreationists, as well as the factors which influence their behaviours and responses in the outdoor recreation setting (Brown, Driver, and Stankey, 1976; Driver, 1976). Research has demonstrated that the recreating public is not homogeneous in its responses and needs; consequently the demands of various user-groups need to be differentiated so that opportunities and management programmes may be designed to accommodate this diversity.

Traditionally, judgments about user satisfactions and their preferences have been largely a projection of planners' values and opinions about what others prefer or should prefer (White, 1966). In recent years, however, recognition of the inadequacy of this approach has prompted the development of a behavioural research orientation, which attempts to provide planners and managers with empirical evidence of the social and psychological aspects of user demand and behaviour. Such information is useful for many types of management decisions, such as selection of management objectives and management tools to achieve those objectives (Brown, Driver, and Stankey, 1976), and indeed essential where such decisions relate to the provision of user satisfactions and benefits.

One type of problem which planners frequently must address concerns the inherent conflict between preservation and use of scarce and valuable resources. Many planning approaches are possible to deal with this issue, and quantitiative information about the perceptions and opinions of the public constitutes one type of knowledge base which is useful in formulating and selecting alternative courses of action for managing these conflicting goals. Following an introductory discussion on the general role of behavioural research in planning, this topic will be addressed in greater detail in order to clarify the conceptual basis for the present study.

B. Historical and Functional Aspects of Behavioural Research

In the last decade, several developments have contributed to an increased interest in the behavioural aspects of outdoor recreation research and planning. Planning, in general, has begun to focus on concerns relating to the "quality of life", rather than simply the provision of specific types and quantities of services (Burton, 1976; Gold, 1972; Lime, 1972). In outlining the history of outdoor recreation planning, Jubenville (1976:40) has identified the era from 1970 to the present as the "Quality of Life Stage" in which the quality of the ecological and social aspects of the recreation environment has become increasingly important. This contrasts with previous eras which have been predominantly resource oriented (Welfare Development Stage: 1930-50), or concerned with supply increases to meet burgeoning demand (Mass Use and Development Stage: 1950-1970). Concurrent with this focus on quality, planners have attempted to modify their approach from a model of planning *for* the user-clientele to planning *with* the user (Burton, 1976; Porteus, 1977:315). Behavioural information, gathered directly from users, represents one form of user participation in this planning process.

It has also become increasingly evident that planners' intuitions might not provide the most accurate source of information about recreationists' behaviours, needs, and preferences. Research in the field of outdoor recreation

management has demonstrated that perceptions and values of resource managers often vary considerably from those of the user clientele they serve. These discrepancies have been shown in relation to a variety of planning and management factors, including the identification of problems in the recreation environment (Clark *et al.*, 1971; Peterson, 1974), actual use patterns (Lucas, 1977), appropriate management and development strategies (Lucas, 1964; Hendee and Harris, 1970), and concepts of recreation settings such as parks and wilderness areas (Lucas, 1964; Merriam, Wald and Ramsay, 1972). These findings have underlined the need to communicate directly with the recreationist through behavioural research, in order to reduce the influence of management bias and to facilitate decisions which are more acceptable to the public.

Furthermore, the rapid increase in the number of outdoor recreation participants has necessitated a change in perspective, so that resource management has increasingly become "people management" (Clawson, 1972:59; Peterson and Lime, 1979). Jubenville (1976:23) has also pointed out that social needs and values change more rapidly than biological phenomena, and therefore require more intensive monitoring for recreation planning. The subsequent demand for social research has resulted in the adaptation of concepts from the social and behavioural sciences to outdoor recreation planning and management problems. Correspondingly, there has been increasing support for the concept that recreation is

an "experience", rather than simply participation in activities (Driver and Tocher, 1975). As a result, there has been a "marked shift away from aggregate models of demand toward detailed consideration of the individual recreationist, his attitudes, values, and behaviours." (Mercer, 1979:122).

As outlined by Driver (1976), behavioural information constitutes just one of the types of knowledge bases which is relevant to outdoor recreation planning and management. Other types of information which should be considered include:

1) Resource Location: Information about the setting and suitability of the physical resources, including an appraisal of their relative scarcity, uniqueness, carrying capacity, and appropriateness for providing specific recreation opportunities.

2) Historical Use: Descriptive statistical information on past and current participation trends.

3) Economic: The application of principles of public finance to resource allocation, focusing on such issues as the benefits and costs of providing different facilities in different locations, the scale of development, and how opportunities should be financed.

4) Administrative-Political: An approach in which the primary reliance is placed on the democratic-political process to allocate recreation resources. Information is obtained from such sources as voter behaviour, lobbying of

specific interest groups, and public hearings.

Driver (1976:170) emphasizes that information from all five knowledge bases needs to be integrated through a multidisciplinary approach, with different problems requiring different weightings for each type of knowledge base. It is evident that management cannot rely solely on public opinion as a basis for policy (Lime, 1972). However, behavioural research can contribute to this integrated approach by clarifying user-related factors which would not be apparent if an inventory of background information were limited to the four knowledge bases outlined above.

It has been pointed out that behavioural information can contribute to many types of planning decisions. When alternative courses of management actions are being considered, the consequences and implications may be better understood when the range, mix, and intensity of public sentiment is documented (Stankey, 1977). Furthermore, the collection of information about recreation resource users may allow planners to discover "regularities and consistencies in behaviour, and may sensitize planners to individual and group differences which exist among the user clientele." (Porteus, 1977:226). Awareness of the range of user behaviours and demands may assist planners in selecting management tools and management objectives, and in formulating modifications to an existing system (Brown, Driver, and Stankey, 1976). In addition, behavioural information may alert managers in advance to potential

consumer reactions (Loewenthal, 1966:33) and may indicate the need for explaining programmes, changes, and management strategies to the public (Lime, 1972; Lucas, 1969). Primarily, an understanding of the user clientele should assist planners in providing a spectrum of opportunities which meet the diverse demands of the various user-groups, as well as quality recreation experiences which are both satisfying and beneficial.

C. Preservation and Use of Outdoor Recreation Resources

Many agencies concerned with the planning and management of outdoor recreation resources operate under a mandate which encompasses two major goals. Although phrased in a variety of ways, these goals specify both the preservation of resources for the future, and the use and enjoyment of these resources by the public. Under many conditions, there is an inherent conflict between these objectives. Often, resources which are fragile, scarce, or represent unusual or unspoiled beauty are threatened by the presence and actions of the visiting public, who are attracted to a site by the aesthetic features or opportunities for recreation in a pleasing setting.

This situation is exemplified in two Provincial Parks in Southern Alberta, which were chosen as the study sites for the present research. These two parks (Dinosaur and Writing-on-Stone Provincial Parks) contain unique resources of national and international value, but also serve a

recreational role for regional residents due to their scenic and pleasant locations in prairie river valleys. The resource values of Dinosaur Provincial Park include paleontological remains as well as unusual riparian and badland habitat. In the past, public access to paleontological sites has resulted in disturbances and removal of significant fossils, and encroachment of public use has resulted in some destruction of riparian and badland terrain. Writing-on-Stone Provincial Park contains petroglyphs and pictographs, drawn on exposed sandstone rock faces, as well as fragile hoodoo formations and valuable wildlife habitat. The most significant evidence of visitor impact upon these resources has occurred at the site of the native rock art, where the rock face and designs have been defaced with graffiti by park visitors in past years. Public access to these sites has thus become a concern in recent years.

Where both the quality of the environment and the quality of the visitors' experience must be protected to provide sustained benefits, the tensions between preservation and use of the resource must be managed through the selection of appropriate policies and management strategies. Since a range of activity, development and management options is available, planners must determine for any particular site the relative emphasis to be given to resource protection and visitor use of those resources. Among the factors to consider are the types of activities to

be provided and their associated support facilities, as well as specific visitor and resource management strategies having various degrees of control and treatment. For each of these factors, the range of options may be conceptualized along a continuum of user-oriented and resource-oriented elements at the polar extremes. This technique is exemplified by the classification systems of Clawson (1960), and Jubenville (1976). Clawson (1960) has identified types of recreation areas as user-oriented, intermediate, or resource-oriented according to a number of criteria, including general location and major types of activity provided. Similarly, Jubenville (1976) has developed an opportunity spectrum to conceptualize the resource consequences of planning actions according to their degree of irreversibility. At the "activity-oriented" pole of the continuum, where alteration of the resource is relatively high, are such opportunities as playgrounds and sportsfields, while wilderness, with minimal alteration, is at the "resource-oriented" extreme.

A more contemporary and complex approach to the use of the continuum concept in outdoor recreation planning has been developed by Clark and Stankey (1979). Stankey's (1977) approach, stressing the importance of a spectrum of opportunities to meet the diverse needs of outdoor recreationists, has received elaboration in a Recreation Opportunity Spectrum Framework developed by Clark and Stankey (1979).

These authors have identified six significant attributes of outdoor recreation settings which have implications for recreation activities and the experiences provided. Each of these situational attributes (such as degree of access, acceptability of visitor impacts, and acceptable regimentation) can be varied along a spectrum which is defined by polar extremes and intermediate elements. WIth this multi-dimensional approach, recreation opportunity settings are viewed as the result of a specific combination of the six factors in a particular location. When a site is conceptually located at a point in the spectrum, a band of acceptable strategies can be identified from the spectrum of opportunities associated with each factor.

Although Clark and Stankey (1979:8) have labeled their spectrum elements on a continuum from modern to primitive, they stress that it is the concept of varying situational attributes rather than specific labels which is important for selecting management strategies.

Several tools are available to planners to operationalize these concepts, including classification of sites within a system and zoning of component areas within a site. In this way, planners can specify the principal orientation of a site or zone on a continuum such as preservation-use, or resource-oriented/user-oriented and select the activities, developments and management strategies which are consistent with this orientation.

Where the presence of valued resources necessitates that greater weight be given to resource preservation, planners are obliged to select those options which limit recreational use and minimize resource degradation. Among the possible approaches are limiting public accessibility to the resource, specifying various zones with different degrees of development and permissible activities, or focusing on the provision of interpretive opportunities as the principal interface between the user and the resource.

However, since the values of resources are culturally defined (Hunker, 1964; O'Riordan, 1971), users may view the resource differently from the planner, and demand developments or activities which are incompatible with the resource preservation planning objective. Furthermore, several researchers have observed that the types of activities participated in by visitors to specific outdoor recreation resources may be unanticipated by agency policy (McCool, 1978), or be at variance with agency policy (eg., Herrero and Irwin, 1976). In many cases, these activities do not require the particular attributes of the resource, and may be independent of the type of facilities provided. As McCool (1978:71) has noted, user choice of unanticipated or inappropriate activities could lead to unacceptable degradation of valuable resources, and conflict with preservation objectives established by planners and managers.

By helping to clarify the views and potential responses of the resource users, behavioural research can assist planners in anticipating the degree of support they will receive for resource protection measures. In addition, the public's desire for alternative opportunities and management strategies can be identified and brought to the attention of the planner, so that consideration may be given to accommodating these diverse demands through various planning techniques.

Just as the management orientation for an outdoor recreation resource may be viewed on a continuum from "activity/user-oriented" to "preservation/resource-oriented" (Jubenville, 1976), the views of the user clientele may be conceptualized along similar dimensions. Furthermore, there is considerable evidence to suggest that different user-groups, characterized on a number of aggregate factors, may vary in their orientations toward outdoor recreation resources, and in their demands for activities and developments (eg., Jackson, 1980). Since this theme constitutes the basis of the present study, these findings receive more detailed attention in the following chapter.

D. Study Purpose

At the time that this research was undertaken, formal Master Plan development was in progress for each of the two study parks. A primary focus in the formulation of management objectives was the relative weighting to be given

to resource protection measures and to use of those resources by park visitors. It was felt that information about the importance of preservation and recreation functions of these parks to current park users would be useful to planners developing alternative park concepts and would provide an indication of the degree of public support for these concepts.

The purpose of this study was thus to examine the preservation-recreation orientations of visitors to two study parks (Dinosaur and Writing-on-Stone Provincial Parks, Alberta) having resources of outstanding national or international value, as well as recreational potential. Visitors' orientations were assessed along a preservation-recreation dimension since this was considered to be meaningful for practical planning concerns for the two parks, and was pertinent to the resource management and behavioural issues expressed in the recreation literature.

Three behavioural indicators were employed to assess visitor orientations: perceptions of park purpose; activity preferences; and, preferences for management programmes and developments. A review of previous studies revealed that the preservation-recreation dimension was relevant to each of these three factors. Furthermore, the nature of the relationships among these three variables: perceptions of park purposes; activity preferences; and, management preferences, was of considerable theoretical interest.

As one aspect of this examination of the preservation-recreation orientations of visitors to the two parks, this study also undertook to evaluate the orientations of specific user-groups within the park visitor population. Previous research had demonstrated that various user-groups may have differing perceptions, activity preferences, and management preferences with respect to outdoor recreation resources, and that an understanding of this diversity is necessary for the development of a suitable spectrum of recreation opportunities and management programmes. As a background to this aspect of the study, previous research which has identified user-group differences related to the preservation-recreation dimension is particularly relevant and is reported in the following chapter (Chapter Two).

On the basis of this study purpose, a model of variable relationships was proposed, and five specific objectives were developed for the study, including:

1. The determination of preservation-recreation orientations of visitors to each of the two study parks;
2. A comparison of the orientations of visitors to each of the two parks;
3. An examination of variations in orientation among sub-groups of park users;
4. The identification of visitor profiles for each of the two parks, including socio-demographic and visit characteristics; and
5. The investigation of the degree of association among pairs of indicator variables.

These objectives, and the proposed model receive further elaboration in the initial sections of Chapter Three.

E. Study Organization

This first chapter has provided an introduction to the general concepts, purpose, and objectives which form the basis of the study. In Chapter Two, a review of literature related to the specific variables and relationships under investigation is presented. This review focuses primarily on the concept of environmental orientations, and user-group differences in perceptions, activity preferences, and development preferences which have been identified in previous research. This is followed by the presentation of a proposed model outlining the conceptual relationships of the major variables in the study. Further elaboration of the study objectives and variable relationships is provided in Chapter Three. This leads to a discussion of the background of the project, and a description of the research methodology employed in the study.

The first phase of the results, focusing on the overall preservation-recreation views of visitors to Dinosaur and Writing-on-Stone Provincial Parks, is presented in Chapter Four, encompassing Objectives One and Two. An additional objective, focusing on the relationships among the three variable indicators, is also addressed in Chapter Four. The third and fourth objectives form the principal focus of

Chapter Five, where orientation differences among user sub-groups and park visitor profiles are identified and compared across parks. Chapter Six provides a final review of the results, followed by a discussion of the practical and theoretical implications of the study findings.

II. REVIEW OF RELATED LITERATURE

A. Introduction

In this chapter previous research findings are reviewed in order to clarify the nature of the variables addressed in the present study. Initially, a general overview of the conceptual orientation is provided, expanding upon the notion of variations in personal responses to outdoor recreation environments which was introduced in Chapter One. Following this introduction, there is a more detailed presentation of findings related to the major variables of the study: perceptions and definition of place, activity preferences, and preferences for management and development programmes. In each case, those findings which suggest variations in behavioural responses to outdoor recreation environments are highlighted, particularly where they relate to the preservation-recreation dimension which is the focus of the present study. Included in the discussion are research findings which suggest the nature of relationships among the three variables. Finally, these variables and relationships are conceptualized in a proposed model, leading to a documentation of the specific propositions to be investigated.

B. Variations in Behavioural Response to Recreation Environments

Outdoor recreation represents one form of human interaction with the natural environment (Gold, 1972). Since the values of resources are culturally and socially defined (Hunker, 1964), public responses to the natural environment vary considerably. This diversity of views and behaviours is evident with respect to general resource-related issues (eg., Tognacci *et al.*., 1972), as well as for specific outdoor recreation environments such as wilderness areas and parks (eg., Hendee *et al.*, 1968; Merriam, Wald, and Ramsay, 1972). The ways in which people classify the environment, including the perceptual and cognitive beliefs and differentiations they make about environments, may be referred to as "environmental orientation" (Chemers and Altman, 1977:44). This concept is of considerable relevance to outdoor recreation planning since there is a growing body of research which suggests that personal images of environments are directly related to behaviour with respect to those environments (Bryan and Jansson, 1973; Dorfman, 1979; Foster, 1977; Rostron, 1970; Schreyer and Roggenbuck, 1977; Stankey, 1973; Wong, 1979). Furthermore, there is evidence to suggest that variations in environmental orientation with respect to both general issues and specific resource concerns are associated with definable socio-demographic and socio-cultural characteristics of population sub-groups. Similarly, researchers concerned

specifically with outdoor recreation contexts have also focused on socio-demographic and socio-cultural factors as explanatory variables related to variations in recreation behaviour.

Of relevance to the present investigation are those studies which demonstrate variations in orientation with respect to the preservation-recreation dimension, and which clarify the relationships of socio-demographic and other factors to these variations. In the general context, studies focusing on environmental concern in relation to general or community-specific ecological issues (eg., Constantini and Hanf, 1972: Tognacci *et al.*, 1972) have helped to identify socio-demographic characteristics which are associated with a conservation or preservation orientation and involvement in activist groups concerned with these issues.

Findings from many of these studies have been summarized by Buttel and Flinn (1974:58) who state that "the most consistent result found in recent investigations is that education is strongly associated with naturalistic values, environmental concern and preservationist dispositions." Other factors which have been associated with a high degree of environmental concern are higher income levels and non-exploitative occupational categories (Buttel and Flinn, 1974; Constantini and Hanf, 1972). Location of residence has been found to be associated with environmental orientation in several studies, with urban residence and origin positively correlated with participation in

conservation groups (Hendee *et al.*, 1969), and the environmental movement (Harry *et al.*, 1969). The findings of Constantini and Hanf (1972) also suggest that "concern about the natural environment is greater among individuals who do not reside in close proximity to conservation areas." (Smith and Alderdice, 1979:334).

Studies in the outdoor recreation context have frequently defined recreationists' orientations according to specific dichotomies or dimensions, so that the association of socio-demographic and other factors to these variations could be more readily investigated. A presentation by Bultena and Klessig (1969: 349-351) provides a conceptualization for social research in outdoor recreation settings, describing several orientation dichotomies evident in campers' motivations and camping styles, which are generalizable to other recreation contexts. These dimensions include:

1. A desire to derive benefits from a specific resource base versus resource base substitutability;
2. Primitive style versus comfort and convenience;
3. "Activistic" orientation versus relating to nature through contemplative or reflective activities; and,
4. Experiences in which a man-land relationship is stressed versus desire for social experiences in which the man-man relationship is primary.

Measurement scales incorporating many of these dimensions have been developed by researchers and administered to recreationists in various settings. Examples

of these scales include the Wildernism-Urbanism scale of Hendee *et al.* (1968), the Utilization-Preservation Scale of Catton (1969), the conservation-development dimension of Sadler (1970), and the Hendee, Gale, and Catton (1971) typology. Studies which have employed these, or similar scales, have demonstrated the range of environmental orientations which exist among outdoor recreationists. An overview of these studies supports Bultena and Klessig's (1969) conceptualization of outdoor recreation orientation: some respondents are oriented more toward enjoyment of natural features, protection of natural resources, and minimal intrusion by man, while others show a greater orientation toward social experiences and more extensive development of urban artifacts in natural areas. For example, in the wilderness context, researchers have found differences in the degree of wilderness-purist responses of wilderness users, with some "seeking maximum solitude and contact with nature to others seeking a social experience in which wilderness is simply a convenient setting" (Lime, 1976:7). Similarly, campers have been differentiated in terms of their social and environmental orientations (Bultena and Klessig, 1969; Clark, Hendee and Campbell, 1971; Schinkel, 1980; White, Wall, and Priddle, 1978). Clark *et al.* (1971:145) concluded that "the social orientation generally involves high levels of interaction with other campers, a preference for activities often associated with urban environments and developed facilities which take

precedence over contact with the natural environment."

A summary of this review of literature focusing on variations in behavioural responses to outdoor environments is provided in Table 2.1. Many of the factors described in this section relate to the differentiation of preservation and recreation orientations in this study. In investigating these orientations, researchers have employed many types of indicators or measures, including perceptions, recreation activity preferences, and preferences for future developments of recreation sites. These indicators, and relevant preservation-recreation distinctions associated with them, are outlined in the following sections.

C. Perceptions of Outdoor Recreation Environments

Increasingly, researchers have stressed the role of perception as a significant factor in environmental behaviour and decision-making. Perception research has demonstrated that individuals of varying psychological and experiential backgrounds interpret and assess environmental information according to their unique view of the world, developing images and designating meaning to environmental elements. In the outdoor recreation context, researchers have found that an individual's perceptions may influence decisions to recreate (Bryan and Jansson, 1973), recreation behaviours (Lee, 1972), satisfactions with environmental and social attributes of resources (Dorfman, 1979: Stankey, 1973), and views about future management and developments

TABLE 2.1

VARIATIONS IN BEHAVIORAL RESPONSES TO ENVIRONMENTS

SUMMARY OF RELEVANT RESEARCH

Subject	Findings	Source
The relationship of socio-demographic factors to environmental concern.	Stronger concern for environmental and preservational values found to be associated with higher educational levels, higher income levels, non-exploitative occupations, and non-local and urban residence;	Hendee *et al.* (1969). Constantini and Hanf (1972) Buttel and Flinn(1974)
Variations in responses to outdoor recreation environments.	Variations in orientation can be conceptualized along several dimensions, including: "activistic" orientation versus relating to nature through reflective activities; conservation-development; social-environmental.	Bultena and Klessig (1969) Sadler (1970) Clark, Hendee, and Campbell (1971) Schinkel (1980)

(Hendee *et al.*, 1968). An understanding of recreation resource users' perceptions of recreation environments therefore appears to be integral in understanding observed variations in user behaviours and demands.

In many cases, studies have focused on recreationists' perceptions of specific resource attributes, including environmental and social features such as crowding (eg., Stankey, 1973) or the presence of resource degradation (Vaske *et al.*, 1980). Of greater relevance to the present research, however, are the studies which have investigated the public's personal concepts of recreation environments such as parks or wilderness. Employing a variety of indicators, these studies have demonstrated the diversity of meanings or definitions which are attributed to these resources by the public. One aspect of the meaning or image of a resource is the purpose or function that it serves. The range of functions that parks may serve for the public is demonstrated in several studies which have investigated abstract concepts and generalized images of State and National Parks in the United States.

The most direct approach to investigating the concept of a Park was that of Merriam *et al.* (1972), who asked campers what the words "state park" meant to them. Approximately three-quarters of the campers (77 percent) saw a park primarily as a recreation area, while the remaining 23 percent defined a park primarily as a reserve for the preservation of the natural environment. When the total

number of responses was examined, the range of meanings applied to the term "state park" became evident: approximately one-quarter of the responses were oriented toward active recreational use, and one-fifth to nature and conservation. The remaining responses were concerned with personal benefits such as a place to relax (18 percent) and the attributes of facilities such as facility quality (35.4 percent).

White and Schreyer (1981) employed a similar approach, asking National Park (U.S.) visitors what they felt was the "purpose of national parks." They classified responses according to their preservation or use emphasis, analogous to the twin mandates of the National Park Service. Four fifths (80.1 percent) of the respondents emphasized use, whereas 72.0 percent mentioned preservation. They concluded that most visitors had extremely generalized perceptions of the national parks, considering them basically as "places to see and enjoy" (White and Schreyer, 1981:333).

Five distinct themes relating to the functions of national parks were documented by Noe (1978) in a factor-analytical study of highschool age youths. These subjects perceived national parks primarily as a setting for outdoor recreational activities, and as a place for solitude. The remaining factors, which were not so important to the respondents, suggested that parks were viewed as places for social interaction with family and friends, and finally, as a place for the protection of resources, such as

animals, and other natural features.

In the Canadian context, Markle (1975) studied the public's perception of the National Park system, particularly its purpose and role in preserving outstanding natural areas. He employed several indicators of perception, including respondents' views on the functions of the park system, and the specific physical attributes (natural and man-made) that they would expect to find in a national park. Most respondents, selected from three Canadian cities, (St. John's, London, and Calgary) perceived that the major purpose of national parks is to preserve natural areas and wildlife, with the second most important role being the provision of areas for recreation. Responses did vary, however, with the level of education of the respondent. In general, public perception of national parks became more "nature-oriented" and less oriented toward man-made facilities as education level increased.

Another approach to assessing perceptions of recreation places is exemplified by the research of Stankey (1973) who compared the personal concepts of wilderness held by wilderness area visitors with the legislated concept of wilderness as defined by the United States *Wilderness Act*. He determined that a wide range of user definitions of wilderness was evident, based on the intensity of concern for such elements as natural ecosystem, level of human influence, or primitiveness of the recreation opportunity. Respondents were categorized along a "wildernism" dimension

as strong, moderate, or non-purists according to the degree of correspondence between their perceptions of wilderness and the *Wilderness Act* definition. A similar approach was taken by Schreyer and Roggenbuck (1981) who attempted to define visitor images of national parks on the basis of a "Parkism" scale. Although they demonstrated that it was possible to differentiate people into High, Medium, and Low Park Purism categories on the basis of the congruence of their perceptions with formalized park values, they concluded that images of parks were too generalized to be conceptually or managerially useful.

The studies cited above serve as a useful starting point in demonstrating the range of definitions and images which people may apply to park environments. Schreyer and Roggenbuck (1981) have identified a problem with the generalized nature of park images, however, which limits the relevance of this approach to managerial decisions. A similar limitation was found by Markle (1975) who noted that parks within a system may vary greatly, and that variations in perceptions may be related to respondents' experiences with certain types of parks within that system. In view of the short-comings of this approach, it would appear more appropriate and managerially relevant to assess perceptions of specific parks for which environmental parameters may be identified. Furthermore, as Schreyer and Roggenbuck (1981:44) state, the latter approach "may be much more useful in understanding the influence of image upon

behaviour."

Little information appears to be available regarding the relationship of socio-demographic or visitation factors to perceptions of parks. Markle's (1975) findings regarding the positive relationship of education level to perception of national parks as a preservation resource have been cited above. This study also provided an indication that the location of residence could also be an influential factor with regard to park perceptions.

In investigating the relationship of socio-demographic factors to perceptions of wilderness, Hendee *et al.* (1968) also found that wilderness purists were more likely to be highly educated, as well as raised in urban environments. Researchers have also demonstrated that participants in different recreation activities may perceive the environmental and social aspects of recreation resources in different ways (eg., Lucas, 1964; Wong, 1979). For example, Lucas (1964) found that canoeists and motorboaters expressed different concepts of the Boundary Waters Wilderness Area, including the size of the area, and the essential qualities of the wilderness experience. Two recent studies (Hammitt, 1981; Vaske *et al.*, 1980) have suggested that first-time and repeat visitors to recreation sites may also vary in their perceptions of particular attributes of outdoor recreation resources. In view of the relative lack of research relating socio-demographic factors to variations in perceptions of parks, an investigation focusing on these variable

relationships would appear warranted.

The relationship of perceptions to activity preferences appears to be reciprocal in nature, since it has been shown that perceptions of a resource influence behaviour with respect to that resource (eg., Bryan and Jansson, 1973), and that specific activity preferences are associated with variations in perceptions of resource attributes (eg., Lucas, 1964).

In investigating the relationship of perceptions and behaviour, several researchers have used recreation activities as indicators of recreationists' personal concepts of outdoor recreation settings. Since many activities observed at recreation sites are not dependent on specific attributes of the resource (Cheek and Field, 1977), or the specific facilities provided (McCool, 1978), it appears that a particular recreation place may take on several definitions as a locale for recreation behaviours. This evidence led Cheek and Field (1977:70) to conclude that "recreation places are defined as leisure settings by their users rather than specific activity sites", and that these definitions are related to personal and socio-cultural characteristics of the participants (Lee, 1972). For example, McCool categorized groups of activities at water-based resources according to the Hendee, Gale and Catton (1971) typology, which was based on the perceived meaning of activities to participants. On the basis of their differential participation in each of the activity packages,

McCool (1978) concluded that the two groups under investigation (residents and non-residents) were defining the wildland water-based resource differently. Residents defined the resources included in the study as a locale for active and extractive activities, while non-residents focused on appreciative and learning aspects of the environment.

As indicated, these studies focusing on definition of place have employed participation in activity packages as an indicator. In order to refine the understanding of the relationships between definition of place and activities, independent assessment of the two variables, perceptions and activity preferences would appear to be necessary. The degree of association between these two variables should then be evaluated to assess whether activity preferences constitute valid indicators of perception of place. A review of the relevant literature indicates that this approach has not been undertaken to date.

This literature review of perception research has identified that personal concepts of outdoor recreation environments may often be distinguished along preservation-recreation dimensions, and that perceptions may vary with recreation behaviours and socio-demographic factors. The most pertinent relationships described in this section are summarized in Table 2.2. Further research into the relationships of socio-demographic/visitation factors, activity preferences and perceptions appears warranted,

TABLE 2.2

PERCEPTIONS OF OUTDOOR RECREATION ENVIRONMENTS

SUMMARY OF RELEVANT RESEARCH

Subject	Findings	Source
Generalized images or perceptions of parks (state and national)	Parks viewed by respondents primarily as recreation areas, with preservation functions taking a secondary role.	Merriam, Wald and Ramsay (1972) Noe (1978) White and Schreyer (1981)
	The purpose of Parks viewed primarily as preservation of natural areas and wildlife with the provision of recreation of secondary importance	Markle (1975)
Congruence of public perceptions with legislated concepts of Wilderness and National Parks.	A wide range of user definitions could be identified along a "purism" dimension.	Stankey (1973) Schreyer and Roggenbuck (1981)
The relationship of socio-demographic factors to perceptions.	Higher education levels associated with a "nature-oriented" perception of national parks and wilderness areas;	Hendee *et al.* (1968) Markle (1975)
	Participants in different recreation activities may have different perceptions of resources;	Lucas (1969) Wong (1979)
	First-time and repeat visitors to outdoor recreation sites may have different perceptions of resource attributes;	Vaske *et al.* (1980) Hammitt (1981)

TABLE 2.2 cont.

Recreation activities as indicators of perceptions of outdoor recreation settings.	Recreation places are defined as leisure settings by their users, since users may engage in activities which are not dependent on specific resource attributes or facilities.	Lee (1972) Cheek and Field (1977) McCool (1978)
	Personal concepts of leisure settings (as indicated by participation in activities) are related to personal and socio-cultural characteristics of participants, such as location of residence.	Lee (1972) McCool (1978)

however, particularly in the park-specific context, where such research may contribute to a better understanding of park image and behaviours than the general park system research conducted in the past.

D. Recreationists Activity Preferences

Activity preferences constitute one aspect of demand which is of considerable interest to both researchers and planners. Although researchers such as Driver and Tocher (1970:9) have emphasized that recreation is an "experience" rather than simply participation in activities, the concept of activity preferences has proven to be of practical value to planners in decisions related to facility, personnel, and resource allocation (Chase and Cheek, 1979).

Two aspects of activity preference research are relevant to the present investigation. On the one hand, researchers have attempted to understand the relationship of recreational activities to the nature of the resource base. In the second approach, the relationship of activity preferences to other behavioural factors has been the focus of investigation.

Recent evidence has documented the range of recreational activities that may occur on any recreation site. Although somewhat constrained by resource characteristics, many of these activities are non-resource-dependent (Cheek and Field, 1977), and may be unanticipated by planners (McCool, 1978). Using a variety of

aquatic resources as an example, Cheek and Field (1977) found that each resource appeared to serve at least a bimodal role for recreationists, with two activity groupings tending to account for the greatest percentage of recreation behaviours reported for each type of site. McCool (1978) has pointed out that unanticipated activities may contribute to unacceptable degradation of the resource, and that behavioural research may alert planners to the diverse needs of various user-groups so that these activities may receive consideration during the planning stage.

In examining the relationship of activity preference to other factors, researchers have found it useful to cluster the diverse range of recreational activities into empirically or conceptually meaningful groupings or activity packages (Burton, 1971; Christiansen, 1975; Hendee *et al.*, 1971; McCool, 1978; Romsa, 1973; Schinkel, 1980). This approach has allowed researchers to identify the range of activity orientations which characterize man-environment interactions in outdoor recreation settings. One example of this technique is the taxonomic system developed by Hendee, Gale and Catton (1971), in which activities are grouped on the basis of their perceived meaning to the participants. These categories are summarized below:

1. Appreciative-Symbolic: Activities directed toward appreciation of features in the natural environment . . Preservation of the natural environment in its natural

state is necessary for maximum enjoyment of most activities included in the category (eg., hiking, seeing natural scenery).

2. Extractive-Symbolic: Activities characterized by the quest for "trophies" extracted from the natural environment (eg., fishing, hunting).
3. Passive Free-Play: Activities requiring little personal effort and not specific to a forest environment (eg., relaxing, sightseeing).
4. Sociable-Learning: Combines clearly social activities such as visiting, looking around camp, as well as nature study and visiting exhibits. Both types involve intentional social interaction with others, which is the primary source of satisfaction.
5. Active-Expressive: Activities which do not require a forest setting, and may interfere with other activities (eg., water-skiing).

In addition to facilitating an understanding of the diversity of recreation activities, such typologies or groupings have allowed researchers to investigate the association of other variables such as socio-demographic and socio-psychological factors to activity preferences. In this way, the activity orientations of various user groups may be identified. Utilizing the taxonomic system described above, Hendee *et al.* (1971) found that variations in age and educational levels were associated with preferences for different types of activities in a population of campers.

They reported that the appreciative-symbolic activities were preferred more often by younger respondents (20 to 29 years) and those with higher education levels. Active-expressive activities, such as swimming or water-skiing, were also preferred by younger respondents, while older respondents preferred passive free-play activities. Both active-expressive and passive free-play activities were associated with lower educational levels. Schinkel (1980), employing the same typology, investigated the relationships between the five activity packages and several socio-demographic and trip characteristic variables in a sample of campers at three Yellowknife area campgrounds. He found a slightly different pattern when activity preferences were examined with respect to age: appreciative-symbolic activities were preferred by respondents in the older age category (50 years and older), as were sociable-learning activities, while passive free-play and active-expressive activities were preferred by the younger age groups. A second analysis demonstrated activity preference differences when first-time and repeat visitors were compared: those with no previous experience in the campground showed a greater preference for appreciative and sociable-learning opportunities, while repeat visitors preferred active expressive and passive free-play activities.

One factor which has received recent attention in relation to this activity preference typology is the location of residence variable (McCool, 1976, 1978;

Schinkel, 1980). These studies have shown that visitors to state or territorial parks and campgrounds in Canada and the United States, could be differentiated in terms of their activity preferences, according to their status as a resident or non-resident of the surrounding area. McCool (1976, 1978) found a consistent pattern across three categories of state parks (ie., recreational, natural, and historical) and several water-based park units. He concluded that "residents participated more frequently than non-residents in active-expressive and extractive-symbolic activities while non-residents had a greater proportion of their activity concentration in appreciative-symbolic and sociable-learning activities" (McCool, 1976:2). Further support for these findings comes from the research of Schinkel (1980), who found similar differences between tourist and non-resident campers. By considering the relative dependence of these activity packages on the physical and aesthetic aspects of the environment, Schinkel (1980) constructed a social-environmental continuum. Utilizing this scale, he concluded that resident campers indicated a greater social or activity orientation toward the camping experience, while tourist campers indicated a greater environmental orientation.

In McCool's (1978) study, differences were found between two other definable groups, day-users and campers. The activities which were preferred by day-users were in the expressive-symbolic and passive free-play categories, while

a greater proportion of campers showed activity preferences in the appreciative-symbolic, sociable-learning, and extractive-symbolic categories.

Participation in activities has also been shown to be related to the social grouping of the participants. Burch (1964) identified four types of activity aggregations among campers, and found associated social differences. For example, "nature study" camps were characterized predominantly by older couples, in contrast to other types of camps where families predominated. Field and O'Leary (1972) found differential participation in water-based activities associated with the type of social group: for example, family groups were found most often visiting a beach and swimming; friendship groups predominated in fishing and swimming; and family-friendship and friendship groups were over-represented in power-boating. Buchanan *et al.* (1981) found similar relationships with water-based activities. They also determined that some activities may have a relatively narrow appeal, while other activities may attract a greater diversity of social group types.

Although many researchers have examined participation in specific activities or activity groupings (eg., Romsa, 1973; White, 1975) and found variations related to socio-demographic characteristics of participants, the majority of these studies do not relate to the preservation-recreation distinctions which are the focus of the present investigation, and are consequently not relevant

to the current review. The studies cited, however, have suggested that activities may vary in their relationship to the environment and that the environmental orientation of different groups of recreationists can be identified on the basis of their preferences for these activities. Further evidence for the association of activity preferences to environmental orientation comes from the study of Dunlap and Heffernan (1975) which found a relationship between activity preferences and degree of environmental concern. They classified activities into an "appreciative-consumptive" dichotomy: appreciative activities involved attempts to enjoy the natural environment without altering it (ie., preservation orientation) while consumptive activities involved a "utilitarian" approach characterized by removing something from the environment. They found that there was a strong association between involvement in appreciative activities and environmental concern, with concern more likely to be directed toward protecting aspects of the environment necessary for pursuing appreciative activities than toward more abstract concerns such as pollution control.

This review of relevant activity preference research has focused extensively on studies employing the activity package typology of Hendee *et al.* (1971), since the components of this typology are readily related to the preservation-recreation dimension of the present study; other typologies examined (eg., Christiansen, 1975; Romsa,

1973) did not focus on the same types of factors and did not appear to be meaningful for the distinctions developed in this study. In summary, findings from these studies suggest that participation in appreciative-symbolic (or preservation/education-type) activities, is related to the characteristics of higher education levels, first-time visitors, campers, and non-local residents. Findings relating age to participation in appreciative-symbolic activities were not consistent in the studies reviewed. In contrast, participation in activities of an active recreational or social nature was found to be associated with lower educational levels, repeat visits, day-users, and local residents. In addition, differential participation has been found to be associated with the social group structure of participants. A summary statement, outlining these associations, is presented in Table 2.3.

E. Preferences for Management Programmes and Developments

The investigation of recreationists' preferences constitutes one approach to understanding the nature of user demand. Evaluation of preferences provides an indication of the value which users of recreation resources place on attributes of the physical, social, and managerial environments, and identifies component factors which will contribute to more satisfying on-site experiences for recreationists.

TABLE 2.3

RECREATIONISTS' ACTIVITY PREFERENCES

SUMMARY OF RELEVANT RESEARCH

Subject	Findings	Source
The relationship of activities to the resource base.	Each resource/type of site appears to serve at least a bimodal role for recreationists.	Cheek and Field (1977)
The association of socio-demographic and behavioural factors to activity preferences.	Appreciative-symbolic activities preferred by younger respondents (20 to 29 years);	Hendee *et al.* (1971)
	Appreciative-symbolic activities preferred by older respondents (50 years and over);	Schinkel (1980)
	Appreciative symbolic activities prefered by those with higher education levels, first-time visitors to a site, and non-local residents, and campers;	Hendee *et al.* (1971) McCool (1976, 1978) Schinkel (1980)
	Active-expressive activities preferred by younger respondents, those with lower educational levels, repeat visitors, and local residents;	Hendee *et al.* (1971) McCool (1976, 1978) Schinkel (1980)
	Participation in activities related to the social group characteristics of participants	Burch (1964) Field and O'Leary (1972) Buchanan *et al.* (1981)
The association of activity preferences to environmental concern.	Environmental concern associated with involvement in "appreciative" activities.	Dunlap and Heffernan (1975)

In most cases, research related to user preferences has evaluated responses to situational attributes which are managerially relevant to specific sites. Preferences have been determined for landscape characteristics (eg., Shafer *et al.* (1969); Carls 1974), physical or environmental site attributes (Shafer and Burke, 1965; Hancock, 1973; Foster, 1977), and aspects of the social environment such as user densities (Stankey, 1973). Of greater relevance to the present investigation are studies which have examined expressed preferences for management programmes (eg., Hendee *et al.*, 1968; Stankey, 1973; Wong, 1979), and attitudes toward development alternatives (eg., Jackson, 1980; Oliver, 1974; Wohlwill and Heft, 1977).

Few researchers have utilized the concept of a spectrum to organize specific demands along theoretical or practical planning dimensions. However, some of these studies have attempted to identify various factors which might be associated with, or might shape these preferences, such as recreation behaviours (eg., Jackson, 1980), motivations (Roggenbuck, 1977), and socio-demographic variables (eg., Jackson, 1980). Jackson (1980:190) has noted that "people vary in their perceptions and attitudes toward development, but it is possible to identify consistent associations between recreationists and specific user-groups on the one hand, and views on appropriate uses and strategies on the other."

One approach to investigating users' attitudes toward management programmes is to evaluate their reactions to newly instituted management practices and developments. This technique has been employed in two instances where park users' reactions to programmes oriented toward protecting the park environment were evaluated. Harrison (1975)investigated the views of Mt. McKinley National Park (U.S.) visitors and Alaska residents with regard to a public transportation system and camping policies which imposed greater controls on campers. He found no relationship between views about these new programmes, and socio-demographic factors such as location of residence. Similarly, Smith and Alderdice (1979) examined the reactions of visitors to preservation-oriented programmes recently established at Pt. Pelee National Park, Ontario. They found that park visitors indicated a strong desire for preserving the National Park environment, and a desire to maintain a low profile of facilities within the park. No differences were evident between local and more distant urban residents in their degree of Environmental Concern or Services Concern on the scales administered.

The most common approach to investigating preferences toward management and development options has been to solicit the public's views about future alternatives and proposals. For example, Roggenbuck and Kushman (1980) asked landowners along three wild rivers about their degree of support for river preservation policies, and their

preferences for alternative methods of policy implementation. Opinions varied according to location of residence of the landowners. Although both resident and absentee landowners favoured preservation of the wild rivers, resident (local) landowners were less supportive of restrictive protective policies such as river zoning. The study by Hendee *et al.* (1968) found that wilderness users with higher education levels preferred fewer facilities and more use controls to preserve the natural qualities of wilderness, than respondents with lower education levels.

Aside from these studies which have investigated the relationship of location of residence to variations in views about recreation resource developments, or found variations according to education level, there appears to be little information in the relevant literature regarding the relationships of socio-demographic and site visit variables to preservation-recreation development views.

Several researchers have reported, however, that variations in views about appropriate management and development strategies may be associated with recreation behaviours, such as participation/non-participation (Jackson, 1980; Smith and Alderdice, 1979), and participation in specific types of recreation activities such as canoeing/motor-boating (Lucas, 1964), cross-country skiing and snowmobiling (Knopp and Tyger, 1973; Wong, 1979), and sailboating/motorboating (Oliver, 1974). For example, Oliver (1974) found that differences between motorboaters

and sailboaters "appeared to consist fundamentally of an orientation toward man-made facilities favoured by motorboaters, and the solitude and wilderness aspects of the natural environment favoured by sailboaters."

In addition to the above studies which have related recreationists' activities to management preferences, some researchers have undertaken to relate perceptions and environmental orientations to users' views about management practices and development options. Much of this work has focused on the responses of visitors to wildland or wilderness recreation environments. In the study of Hendee *et al.*, (1968), wilderness users were categorized according to the degree to which they possessed wilderness-purist or urban values on the basis of their views about the appropriateness of selected physical and activity attributes in the wilderness environment. They found that the degree of support for management practices and programmes was related to the respondents' wilderness-purist orientations, with wilderness-purist respondents more strongly opposing policies altering the complete naturalness of the wilderness. Bultena, Albrecht and Womble (1981) found a similar pattern, with wilderness orientations of backpackers being important in their differential acceptance of backcountry management policies. Studies by West (1981) and Echelberger, Deiss, and Morrison (1974) have attempted to relate attitudes toward management practices to specific perceptions of overuse and overcrowding in backcountry

areas. In both instances, however, the relationships between perceptions of overuse and preferences for management actions establishing use controls were weak. In a similar pattern, few differences were found in preferences for management actions by Schreyer and Roggenbuck (1981), who compared three groups with different parkism images. Thus, recreationists identified as High, Medium and Low on the Parkism scale showed few differences when preferences for campsite development, use distribution, and regulation were compared. Those in the High Parkism category appeared to be more favourable to limiting group size, and imposing seasonal use limits, however, indicating somewhat greater concern for increasing user satisfaction and protecting park resources.

In summary, research cited in this section indicates that variations in preferences for management programmes and developments have been found to be related to participation in recreation activities and somewhat inconsistently to perceptions of outdoor recreation resources (see Table 2.4 for a summary of this research). Although several of these studies relate to the preservation-recreation dimension of the present study, little information appears to be available regarding the relationships of socio-demographic and visit characteristics to preservation-recreation management preferences in a park setting.

TABLE 2.4

PREFERENCES FOR MANAGEMENT PROGRAMMES AND DEVELOPMENTS

SUMMARY OF RELEVANT RESEARCH

Subject	Findings	Source
Reactions to protection-oriented management programmes.	Views about newly instituted programmes did not appear to be related to socio-demographic factors such as location of residence;	Harrison (1975) Smith and Alderdice (1979)
	Support of protection oriented proposals were related to socio-demographic factors, such as non-local residence and higher education levels;	Hendee *et al.* (1968) Roggenbuck and Kushman (1980)
	Views about management and development strategies were related to recreation behaviours, such as participation/non-participation, and participation in specific types of recreation activities.	Oliver (1974) Jackson (1980) Smith and Alderdice (1979) Wong (1979)
The relationship of perceptions to management preferences	An inconsistent pattern was evident; some studies supported an association while others suggested a weak relationship between these variables.	Hendee *et al.* (1968) Echelberger, Deiss, and Morrison (1974) Bultena, Albrecht and Womble (1981) Schreyer and Roggenbruck (1981) West (1981)

F. Definition of Variable Relationships

The foregoing literature review has introduced the concept of environmental orientations, and the relevance of this concept to outdoor recreation planning. In investigating environmental orientations in the outdoor recreation context, researchers have employed many types of indicators or measures, including perceptions, recreation activity preferences, and preferences for development and management programmes. A review of literature pertinent to each of these topics has illustrated that, for each of these variables, variations could be related to such factors as the socio-demographic or social group characteristics of respondents. Many of these studies are relevant to an understanding of the preservation-recreation dichotomy, as they address several component factors involved in the conceptualization of preservation and recreation orientations. In addition, the nature of relationships among the indicator variables has been outlined in the discussion.

Jackson (1980) has developed a model which serves as a basis for summarizing the relationships among these variables (see Figure 2.1). According to the model, "socio-demographic characteristics are viewed as a major factor in recreation activities and use patterns of a specific . . . resource which in turn shapes . . . attitudes concerning what is considered desirable and appropriate for development" (Jackson, 1980:190). In view of the findings from other studies investigating the relationship of

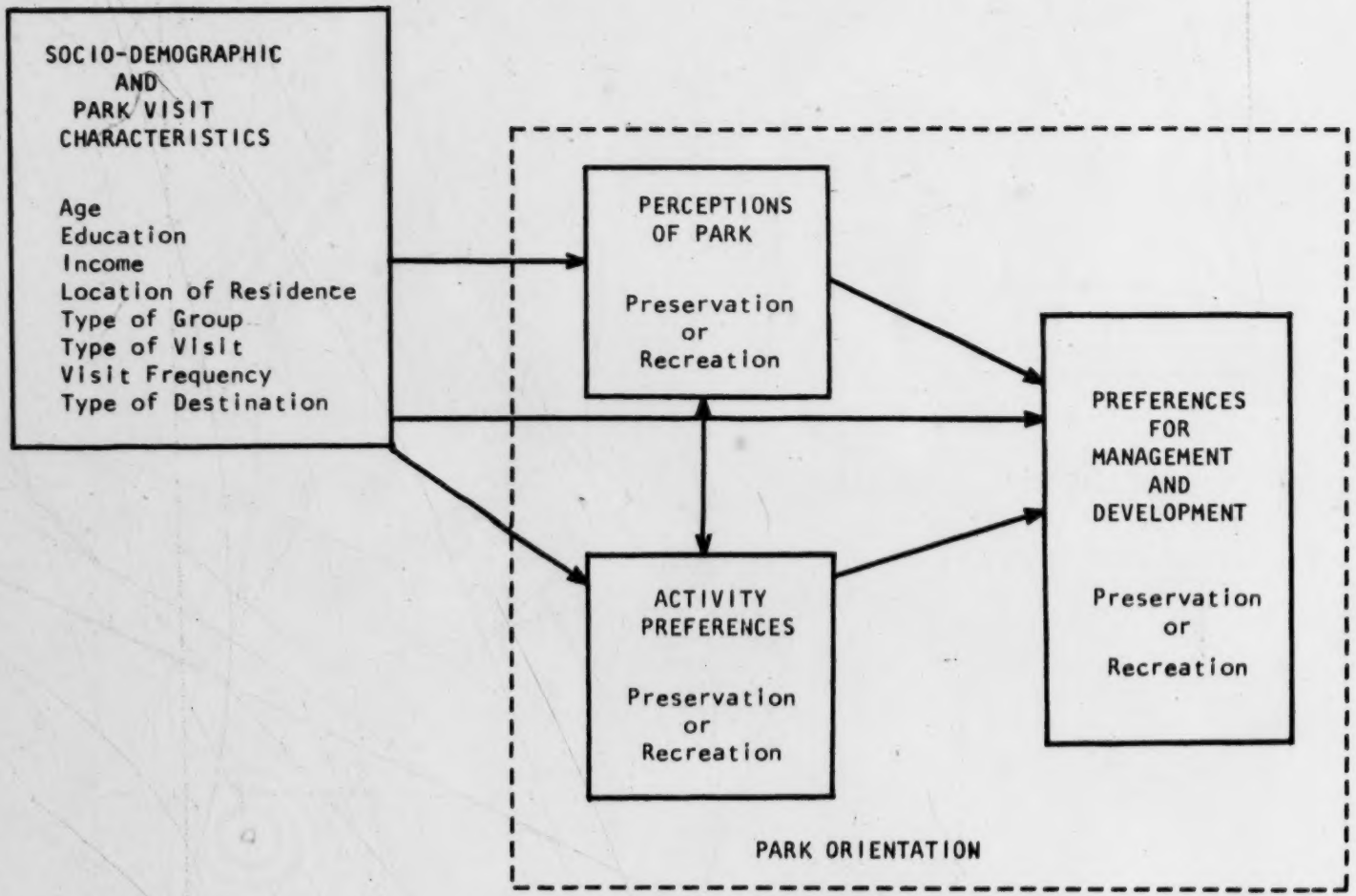

Figure 2.1: Interrelationships between socio-demographic/park visit factors and perceptions, activity preferences, and management preferences

perceptions to recreation behaviours and development preferences, incorporation of perceptions as an additional factor in the model would appear to be appropriate. Park visitation factors are also included as possible explanatory variables related to perceptions and activity preferences, and direct relationships among socio-demographic/park visit factors and preferences for management are also proposed. These additional variable relationships are incorporated into Figure 2.1. The three variables, perceptions, activity preferences, and management/development preferences are viewed as indicators of environmental orientation. Selected socio-demographic and park visit factors are seen as major factors related to perceptions of park purpose and to activity preferences. These variables in turn influence expressed demand for management programmes and development. Specific objectives and propositions relating to this model are developed in the following chapter.

III. OBJECTIVES, BACKGROUND AND METHODOLOGY

A. Introduction

The discussion presented in this chapter is divided into three principal sections. In the first section, the general study direction and thesis objectives are detailed. In the second section, the rationale for the selection of the study sites, Dinosaur and Writing-on-Stone Provincial Parks, is outlined. Descriptions of the parks, and the planning backgrounds for each site are also presented. The third section focuses on the survey methodology, including development of the questionnaire instrument, sampling techniques, and treatment of the data.

At the time of the study, the researcher was affiliated with the Planning Branch of Alberta Recreation and Parks, the agency managing the Alberta Provincial Park system. As part of this project, a report summarizing the survey results, as well as visitors' spontaneous comments, was prepared for each of the two Provincial parks, Dinosaur and Writing-on-Stone. These reports were limited to frequency analyses and were intended to summarize practical aspects of the study for park planners associated with the two parks. The subject matter and variable relationships addressed in this present thesis were beyond the scope of these reports.

B. Overview of the Study

The overall goal of this study was to evaluate visitors' orientation toward parks having resources of both heritage and recreational value. Previous research had suggested that variations in environmental orientation with respect to both general and specific environmentally-related issues may be conceptualized along dimensions relating to preservation and recreation distinctions (Hendee *et al.*, 1968; Markle, 1975; Merriam *et al.*, 1972; Sadler, 1970; Smith and Alderdice, 1979). According to this conceptualization, behaviours which are dependent on the resource, and which indicate support for protection of park resources and minimal development of facilities would be considered "preservational." Those responses indicating preferences for user-oriented opportunities emphasizing active or socially-oriented experiences not dependent on the specific qualities of the resource, and supporting more intensive development options, would be considered as "recreational." This "preservation-recreation" dimension would be managerially relevant, since these distinctions were similar to two categories of a park classification system, which was being developed by Alberta Recreation and Parks during the initial phases of this research project.[1]

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[1] This classification system has since undergone considerable revision, and is now being developed as a four-category system consisting of Wilderness Areas, Ecological Reserves, Parks and Recreation Areas. The preservation-recreation dimension is encompassed in this spectrum of land management categories.

In order to operationalize the concept of environmental orientation for this study, perceptions, activity preferences, and preferences for development were considered appropriate as indicator variables on the basis of previous research findings which found preservation and recreation-related distinctions in recreationists' responses for each of these variables (Hendee *et al.*, 1969; Markle, 1975; McCool, 1976, 1978; Roggenbuck and Kushman, 1980; White and Schreyer, 1981).

C. Thesis Objectives

The first objective of the study is to determine the overall orientation of visitors toward preservation and recreation-related factors for each of the two study parks. This approach is intended to provide planners with an indication of the degree of public support for resource protection planning concepts, and an understanding of demands for recreation-related opportunities. In order to achieve this objective, visitors' responses on each of the three indicator variables (perceptions, activity preferences, and management preferences) will be determined, and conclusions about overall preservation and recreation orientations toward park resources will be based on a descriptive overview of the predominant response patterns occurring for these three variables. Due to the investigative and descriptive nature of this approach, no hypothesis or propositions are developed related to this

objective.

The second objective of the study is to compare the overall preservation-recreation orientations of visitors for each of the two study parks. Although the two parks might be viewed by planners as similar types of resources within the park system, it is considered possible that users of these two parks might define the parks differently. A comparison of this nature would provide a valuable source of information for planners who benefit from the perspective gained from inter-park comparisons. Since there is no *a priori* information available to suggest similarities and differences in visitors' responses to the two parks, no propositions could be developed with regard to this objective.

The third objective is to examine the relationship of selected socio-demographic and visit characteristics of park visitors to variations in orientation toward park resources. Previous research has indicated that outdoor recreationists, and park visitors in particular, may vary in their orientations, and that these variations may be related to the socio-demographic and visit characteristics of participants. In past research, associations between socio-demographic/visit characteristics and environmental orientations have been shown for each of the three indicator variables: perceptions (Hendee *et al.*, 1968; Markle, 1975; Vaske *et al.*, 1980), activity preferences (Burch, 1964; Field and O'Leary, 1972; Hendee *et al.*, 1971; McCool, 1976,

1978; Schinkel, 1980), and preferences for management and development (Hendee *et al.*, 1968; Roggenbuck and Kushman, 1980). In order to achieve this objective the relationships of selected socio-demographic and park visit characteristics to preservation and recreation perceptions, activity preferences and management preferences will be investigated. For many of the possible relationships, the nature of the associations cannot be postulated due to the apparent lack of directly related research. On the basis of findings reported in the literature review, however, the following propositions related to this objective are developed:

a) Variations in preservation and recreation perceptions of park purpose/objectives will be related to socio-demographic and visit characteristics of park visitors. This is based on previous research which has suggested that perceptions of outdoor recreation resources are related to educational level of respondents, with higher educational levels associated with stronger preservation orientation (Hendee *et al.*, 1968; Markle, 1975), and to location of residence (Bryan and Jansson, 1973; Markle, 1975).

b) Variations in preservation and recreation activity preferences will be related to socio-demographic and visit characteristics of park visitors. This proposition has been developed on the basis of previous research which has determined that activity preference orientations are related to age (Hendee *et al.*, location of residence (McCool, 1976,

1978; Schinkel, 1980), type of social group (Field and O'Leary, 1972; Buchanan, 1981), type of visitor (day user/camper) (McCool, 1978), and first-time/repeat visitors (Schinkel, 1980).

c) Variations in preservation and recreation management preferences will be related to socio-demographic and visit characteristics of park visitors. The findings from previous studies have suggested that variations in management and development preferences are related to education (Hendee *et al.*, 1968), and location of residence (Roggenbuck and Kushman, 1980).

The fourth objective of the study is to examine similarities and differences in the orientations of visitors to the two study parks in the light of the preservation and recreation views of specific sub-populations of users and the constituent visitor profiles for each park.

The fifth, and final, objective is to investigate the relationships among the three indicator variables employed in this study. This represents an attempt to examine the degree of association and predictive value of these variables, and to clarify variable relationships which had received little direct investigation in previous research. This approach entails the investigation of three variable pairs:

1. Perceptions and activity preferences;
2. Activity preferences and management preferences; and

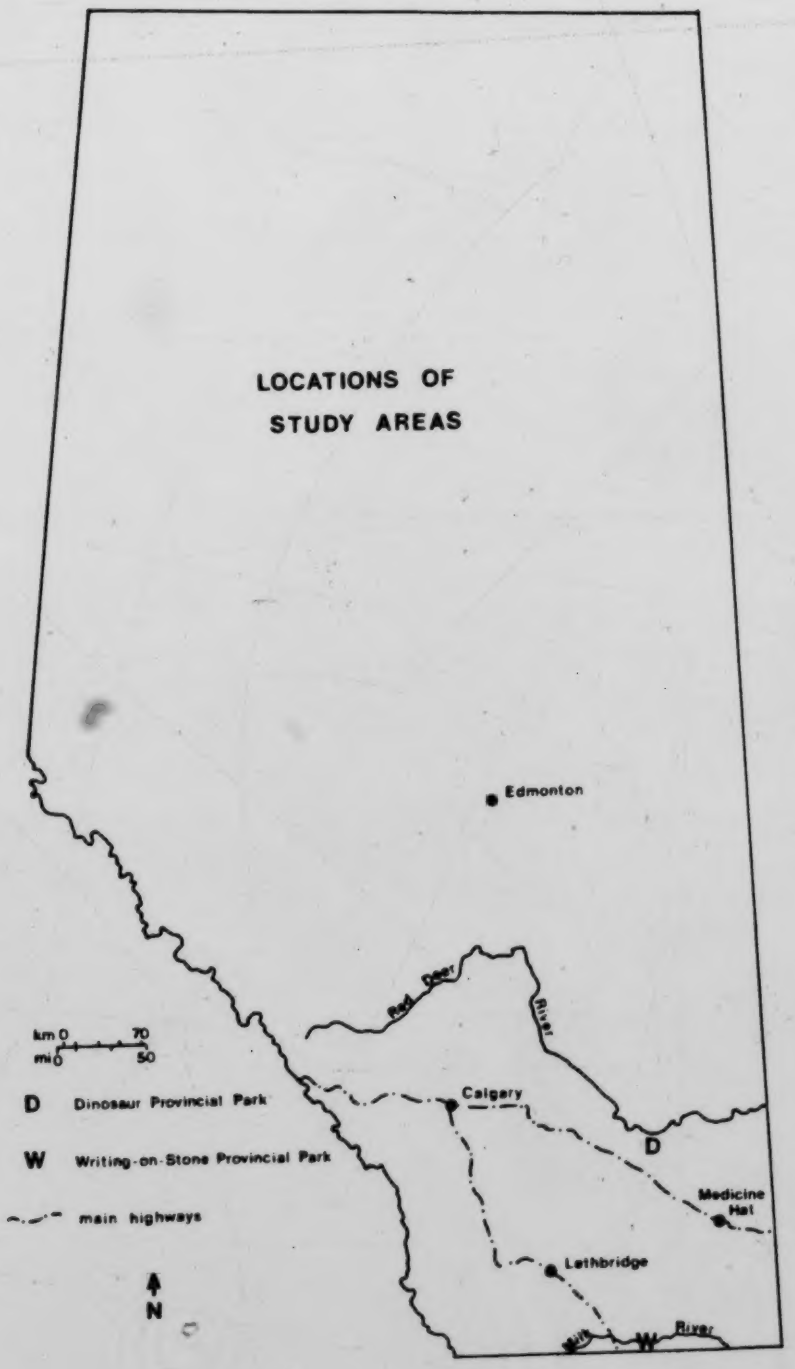
3. Perceptions and preferences for management.

A review of the relevant research suggests that little attention has been given to direct assessment of the associations among these specific types of variables. Several studies have reported however, that variations in preferences for management programmes are related to activity preferences and behaviours (Jackson, 1980; Knopp and Tyger, 1973; Lucas, 1964; Oliver, 1974; and Wong, 1979). The relationship of perceptions to management preferences has been demonstrated by Hendee *et al.*, (1968), but this has not been supported by the work of Echelberger *et al.* (1974) and West (1981). Finally, the association of perceptions to activity preferences has received some direct attention (Lee, 1972; McCool, 1978), but further study of the nature of the relationships for these variables appears warranted.

D. Rationale for Site Selection

The survey research was conducted at Dinosaur and Writing-on-Stone Provincial Parks, located in the south-eastern grassland-prairie region of Alberta (see Figure 3.1). Both parks are operated under the jurisdiction of the Alberta Recreation and Parks Department, Provincial Parks/Design and Implementation Division. The sites were selected in conjunction with Archie Landals, the Associate Director of Planning, Outdoor Recreation Planning Branch. It was felt that these parks offered research opportunities which would be of both practical and theoretical

Figure 3.1: Location of Study Areas



significance.

Of primary importance was the opportunity to investigate behavioural factors associated with park visitors/outdoor recreationists. Since the formal development of a Master Plan was in progress for both of these parks, it was felt that a study of this nature could contribute useful information to planners regarding visitors' characteristics and their views about park activities, programmes and developments. This would entail the investigation of visitors' perceptions and management preferences, as well as socio-demographic and visitation characteristics, topics which concurred with the principal theoretical interests of the researcher.

Secondly, both Dinosaur and Writing-on-Stone Provincial Parks required relatively unique and complex planning strategies when compared with other parks in the Alberta Parks system. Both parks contain resources of national and international significance, and in recognition of these values, the parks were considered as possible candidates for a Preservation designation within a general provincial park classification framework. With such a designation, the primary emphasis of park management would be directed toward resource protection and visitor appreciation of these resources through interpretive programming. Under such a scheme, the provision of outdoor recreation opportunities would be considered of secondary importance. Traditional use of these parks, however, has included recreational

activities which were not directly dependent on their unique resource features, and both parks have served as regional recreational resources to varying degrees. Information about the relative importance of the preservation and recreation functions of these parks to current park users was considered to be useful for planners developing alternative park concepts.

As one component of the background information inventory, the study of visitors' perceptions and activity and management preferences, differentiated along a preservation-recreation dimension, would be directly relevant to the planning and management concerns for both Dinosaur and Writing-on-Stone Parks, and would have broader relevance to the basic protection-use issue which is encountered by many managers of outdoor recreation resources.

Finally, each park has a designated Preserve zone which was established in order to protect the significant park resources. Public access to these areas is limited to scheduled interpretive tours conducted by park staff. Since the Preserve restrictions constituted a visitor management practice which was unique in the Alberta Provincial Park system, and which had considerable potential to affect the experience of the park visitor, assessment of visitors' opinions with respect to this management feature was also considered to be important for future visitor management.

These three factors -- current Master Plan preparation, similar planning considerations with regard to the roles of resource preservation and recreation, and the existence of designated Preserve areas, constituted features which were common to both Dinosaur and Writing-on-Stone Parks. Thus, in addition to providing information to planners which was specific to each park, these similarities allowed comparison of findings between the two parks which would be of both practical and theoretical interest. Furthermore, an investigation of park user-groups would provide planners with an understanding of some potential user-group differences which might be present in other parks in the Alberta Provincial Park system.

E. Description of the Study Sites

Dinosaur Provincial Park

Dinosaur Provincial Park is located approximately 30 kilometres northeast of Brooks, Alberta (Figure 3.1) and encompasses 14,692 acres of badland terrain along the Red Deer River Valley. In 1980 the park was designated as a World Heritage Site by the United Nations (UNESCO), in recognition of the international significance of the park's resources. Of particular importance are the Upper Cretaceous dinosaur fossils which are of value both in terms of concentration and species variety. Other significant resources worthy of protection are the badland terrain and

riparian habitat of the Red Deer River valley, some rare faunal and floral features, and Plains Indian artifacts.

Regionally, Dinosaur Park is complemented by Kinbrook Island Provincial Park, which serves as a recreational resource for the Brooks area, and Tillebrook Provincial Park, which is a campground for Trans-Canada Highway travellers. Estimated park attendance figures, averaged over a three-year period (1976-1979) suggested a yearly visitation level of approximately 18,000 parties (vehicles).

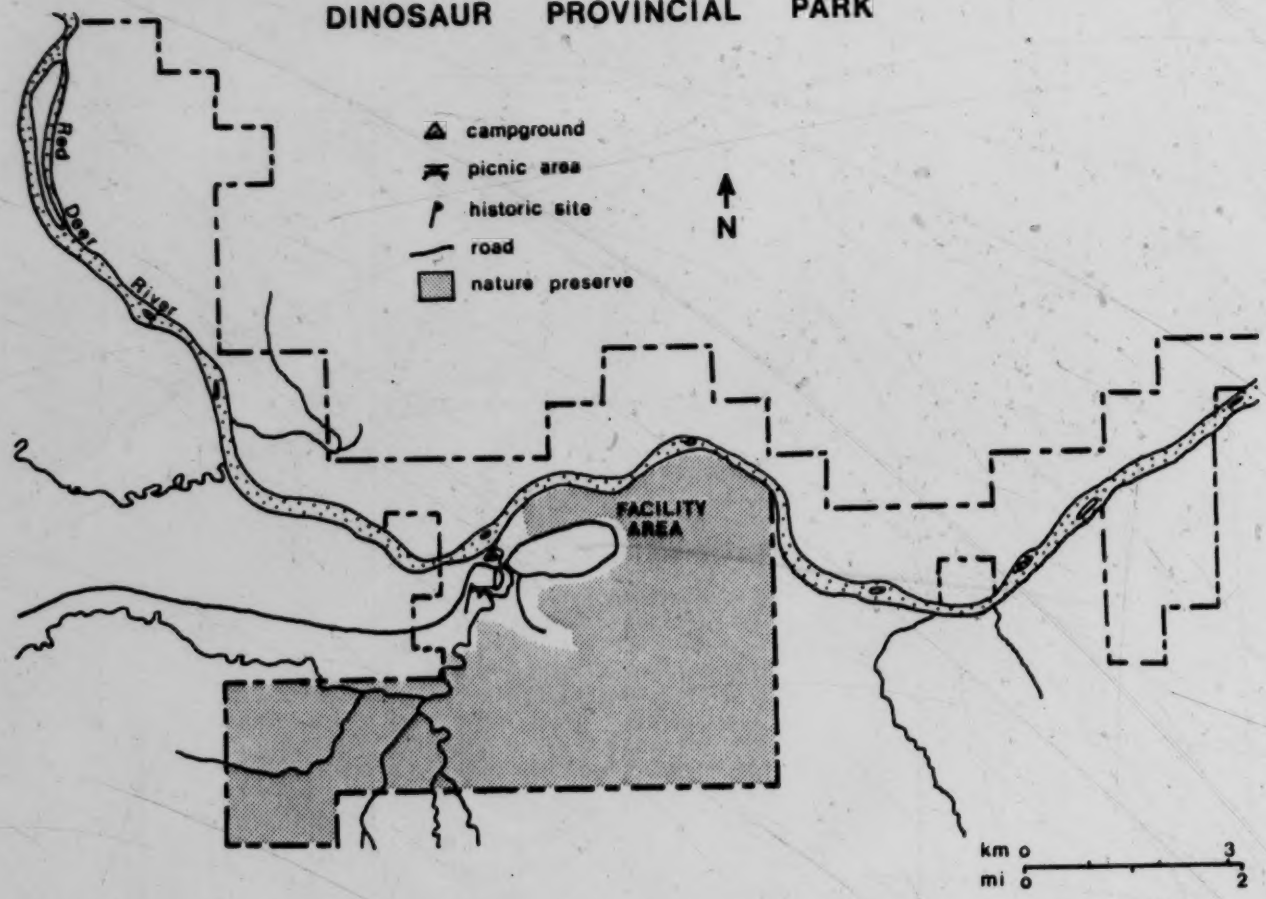
The park is conceptually zoned into two areas (Figure 3.2): the Facilities Area includes a forty-four site campground, picnic area, self-guided trail, a loop road with three dinosaur fossil displays, and scenic viewpoints. The park administration buildings, and historic John Ware's Cabin with associated informal interpretive site are also located here.

The restricted Natural Preserve Zone, established in 1970, encompasses about 90 percent of the park area. There are guided bus and walking tours into this zone to sites which have fossil concentrations and interesting badland formations. Active paleontological research is conducted throughout the summer at specific sites in the Preserve.

No previous visitor studies had been undertaken in Dinosaur Park and very little information was available about park users and their views.

Figure 3.2:

DINOSAUR PROVINCIAL PARK



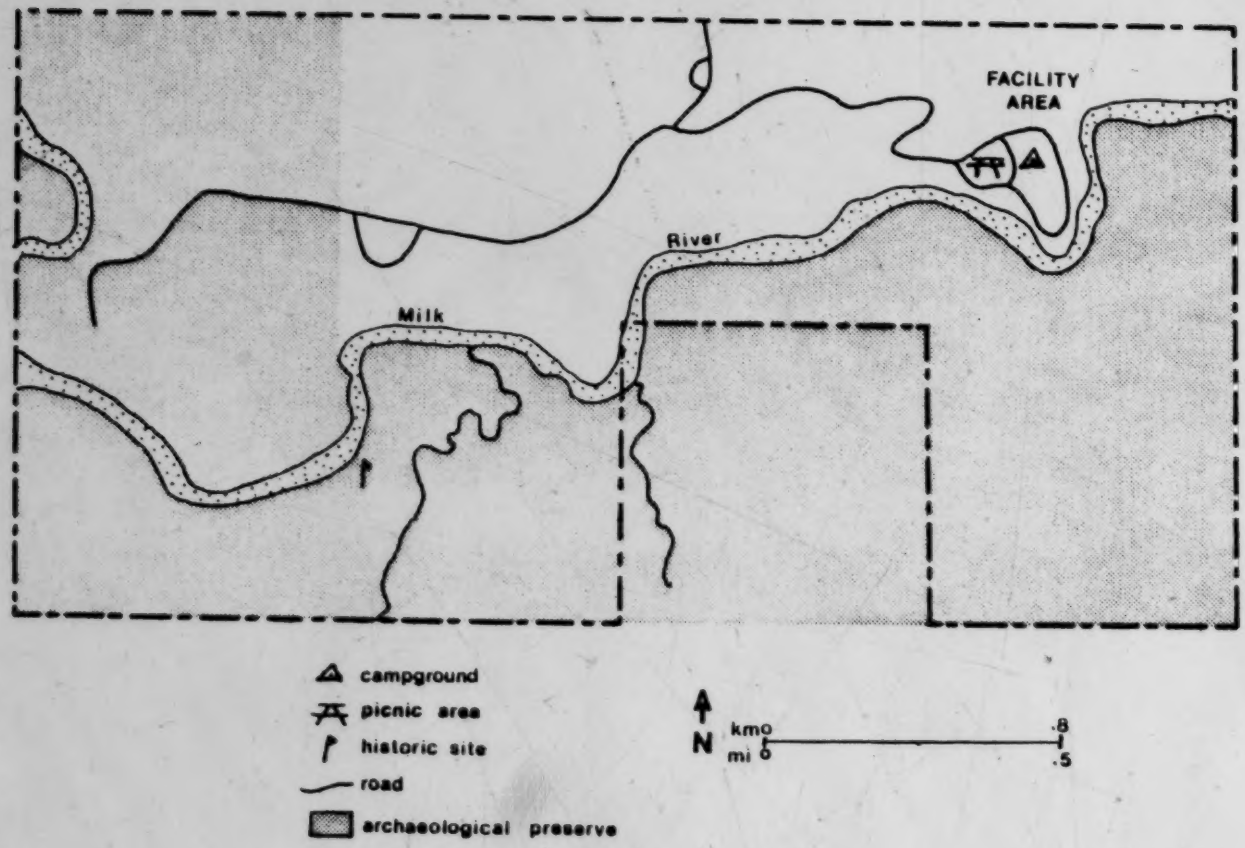
Writing-on-Stone Provincial Park

Writing-on-Stone Provincial Park is located 42 kilometres east of Milk River, Alberta, and approximately 8 kilometres north of the Canada-United States border. The park, established in 1957, encompasses 1,058 acres along the Milk River valley. Included in the park is North America's largest concentration of historic Plains Indians rock art, consisting of petroglyphs and pictographs which have been etched and drawn on exposed sandstone rock faces. Other features of significance include fragile hoodoo formations located along the river banks and coulees, a restored North-west Mounted Police Outpost from the late 1800's, and valuable wildlife habitat.

For management purposes, the park has been divided into two general zones (Figure 3.3). The "facilities" zone includes a thirty site campground, picnic area, playground, scenic viewpoints, and administrative buildings. The Archaeological Preserve was established in 1977, and encompasses approximately thirty-five percent of the total park area. One portion of this Preserve was designated to protect a significant concentration of native rock art, which is accessible to the public only through guided walking tours. The remaining portion, located on the south side of the Milk River, was originally established to protect the North-West Mounted Police Outpost during a reconstruction phase, and this also serves to protect wildlife habitat and additional rock art sites. Public

Figure 3.3:

WRITING - ON - STONE PROVINCIAL PARK



access to a portion of this area is through interpretive tours to the Police Outpost and adjacent coulee.

Writing-on-Stone Provincial Park has traditionally served as a local recreation resource, since there are few public sites in the south-central prairie area which offer a treed setting of this quality. Estimated park attendance figures, averaged over a three year period (1976-1979), indicated a yearly visitation rate of approximately 11,235 parties (vehicles).

One previous study, involving park visitors, had been completed in Writing-on-Stone Park prior to the initiation of this project. That investigation (Butler, 1980) was conducted prior to the establishment of the Archaeological Preserve, and focused on the role of interpretation in motivating visitors to protect the Native Rock Art. There is little comparability in purpose, content, and design between the present research and this previously reported study.

F. Research Methodology

Outdoor Recreation Research Techniques

As noted in the introduction, there has been a recent proliferation of research concerned with human behavioural aspects of outdoor recreation. As this trend has developed, many research techniques have been adapted from other fields such as sociology and psychology, photography and engineering, and applied to problems of data collection in

the outdoor recreation setting. The range of research techniques appearing in published outdoor recreation studies has included behavioural observation (Diamond, 1979; Johnson, 1979; Manzie, 1978), experimental designs utilizing treatment and control groups (eg., Butler, 1980; LaHart and Bailey, 1975), the use of secondary sources (eg., More, 1980), and computer simulation of recreation movement patterns (eg., Carls, 1978). A summary of these various techniques, with particular application to river recreation research, has been provided by Clark (1977).

However, it is clearly evident from an overview of the outdoor recreation research literature that the most frequently utilized research tool for collecting information about the recreationist is the survey, employing either the interview or the self-administered questionnaire technique. The questionnaire format is particularly valuable for investigating the personal experiences and views of the recreationist, which are not otherwise directly observable. In addition, this technique allows the researcher to obtain information about the study subjects which may be used to develop a descriptive profile of the survey population. Such information forms a basis for comparison with other studies, allows some evaluation of the validity of the study, and helps to define the generalizations which may be legitimately extended from the research findings.

Problems associated with the use of surveys as a research tool have been well documented (Webb *et al.*, 1966).

Of particular concern is the obtrusive nature of the approach, in which the subject's awareness of the data collection technique may contribute to shaping or influencing the subject's response, and thus introduce error into the study. In many cases, the subject matter of surveys often involves complex social and psychological phenomena, and few controls may be applied to extraneous variables during the data collection.

The Research Technique: Dinosaur and Writing-on-Stone Parks

The survey questionnaire technique was selected as the most appropriate format for the study to be undertaken at Dinosaur and Writing-on-Stone Parks. This technique was judged to be most suitable for the investigation of the personal opinion and perception factors which constituted the focus of the study. In addition, the questionnaire technique allowed the definition of the survey population on a number of relevant characteristics, so that the results could be meaningfully compared between the two parks, and with other reported research findings.

The survey was administered on-site, at Dinosaur and Writing-on-Stone Provincial Parks. This location format was selected since the objective of the research was to investigate the visitors' responses to features and management practices which were specific to the two parks. With this in mind, it was considered necessary to contact the visitors during their actual visits to these parks, so

that their responses could reflect their experiences with those particular sites. Length-of-stay bias was not considered a problem, since all visitors in the sample (both day-users and campers) were contacted as they first entered the park; neither group had a greater probability of being selected on the basis of their length-of-stay.

The research tool consisted of a self-administered questionnaire which was distributed to visitors entering each of the two parks. Several factors influenced this choice of research technique. The self-administered questionnaire format was selected since it appeared to be the most efficient means of sampling the views of a considerable proportion of park visitors, given the limited number of personnel available for the data collection phase of the study (two people). In addition, the specific questions and issues which constituted the basis of the research project appeared to be generally amenable to a structured questionnaire format which could be personally answered by the respondents. Finally, the self-administered questionnaire format was considered to be less obtrusive than the interview technique, since it was completed at the discretion of the respondent, and required no identification during collection or distribution. This factor was thought to reduce one source of error commonly associated with the survey technique.

G. The Survey Instrument

The Self-Administered Questionnaire: Development

The self-administered questionnaire was designed to obtain information which related to the five objectives detailed in an earlier section of this Chapter. Initial discussions about the broad content of the survey were held with the planning staff of Alberta Provincial Parks, and draft questionnaires, incorporating conventional design principles (Babbie, 1973; Burton, pers. comm. 1979) were designed for each park. The draft questionnaires were reviewed by research and planning staff and revised accordingly. Finally, in accordance with the policy of the Alberta Government, the questionnaires were submitted to the Ministry of Public Affairs for approval to distribute the questionnaire to members of the public.

The final questionnaires were derived following an on-site pretest of the instrument at Dinosaur Provincial Park. The objective of the pre-test was to identify potential problems in the instrument, such as the wording of the questions or the layout of the questionnaire, which could be potentially confusing to the respondent. For the pre-test, the draft questionnaires for Dinosaur Park were distributed to approximately thirty campers, who completed their responses during their week-end visit. When the questionnaires were collected, comments were solicited from the respondents regarding any difficulties they had

encountered while completing the questionnaire. As a result of the pre-test findings, several modifications were made in the phrasing of instructions for various questions. The overall effect was to make the instructions clearer and more emphatic, so that visitors would be encouraged to respond to every item as they proceeded through the questionnaire. These changes were also adopted in the Writing-in-Stone Park questionnaire.

The final questionnaire was reproduced in a booklet format, colour-coded for each park. The sponsorship of the survey by the Alberta Recreation and Parks Department was clearly identified on the cover of the questionnaire and the broad purpose of the survey, as well as general instructions for its completion, were detailed on the first page. The booklet contained eight pages of questions, and provided additional space for visitors' spontaneous comments. A copy of the questionnaire for each park is reproduced in Appendix A. The time for completion of the questionnaire was in the range of ten to twenty minutes.

The Self-Administered Questionnaire: Content

The questionnaires for Dinosaur and Writing-on-Stone Parks were identical in general content and format. This situation was possible since the questionnaires for each park were derived on the basis of similar objectives and data needs. As a requirement of the research design, it was also necessary to develop procedures which would facilitate

comparisons between the two parks. Toward this end, the identical questionnaire formats allowed similar coding procedures, as well as standardized computer storage and data processing.

Although the general content and format were comparable for both questionnaires, it was necessary to alter the wording of some items to reflect the specific features and development options associated with each park.

The questionnaire was used to obtain the following types of information: (i) profile (socio-demographic) data; (ii) visitation characteristics; (iii) participation in interpretive activities; (iv) awareness/understanding of the management goals or purposes of the park; (v) the personal importance of selected park activities; (vi) preferences for selected management options; (vii) awareness/understanding of the purpose of the Preserve Areas; and, (viii) perceptions of park features.

Socio-demographic and visitation data were requested in order to develop profiles of the survey population for each park. Section Three, the final section of the questionnaire, requested information about the age, sex, location of residence, education and income levels of the respondent. These questions were included at the end of the questionnaire in recognitionn of a possible hesitancy on the part of the respondents to revealing this type of personal information. It was hoped that respondents might be more comfortable completing this section after they had

recognized the uncontroversial nature of the preceding questions.

Information about visitation characteristics was obtained in Sections One and Two of the questionnaire. Multiple-choice questions were employed to inquire about the following: the arrival time of the party (ie. weekend or weekday); the type of visit (day-use/camping); the type of destination (main destination/one of several destinations/stopover); visitation frequency (first visit/repeat visit); and type of group (family/friend/organized/single). In addition, respondents were requested to indicate if they had participated in each of the interpretive services available for each park. This information was obtained in order that subgroups of the survey population could be defined on a number of selected dimensions. The perceptions and preferences of these definable groups could then be investigated and compared during the analysis phase of the study.

An important objective of the survey was to examine the degree to which visitors' perceptions and preferences were oriented toward a preservation or recreation view of each of the two parks. Three measures were incorporated into the questionnaire to provide an indication of the preservation-recreation orientation of park visitors: perceptions of the purpose of the park (Section Two, Question Four); the personal importance of selected park activities (Section Two, Question Six); and expressed

preferences for certain development options (Section Two, Questions Eight and Nine. In each case, a spectrum of items was presented, sampling some activities or practices which were concerned with preservation, and some which were considered to be more recreation-oriented.

The items selected to represent the preservation end of the dimension reflected a concern with protection and an appreciation of park resources; eg., "learning about the history and culture of the area." Those items which were considered "recreational" were more evidently active or social in nature and less directed toward the specific resource attributes of Dinosaur and Writing-on-Stone Parks; eg., "visiting people", and "playing field sports." Also included in this grouping were items directed toward tourism and increased personal accessibility to significant park features.

Each of the three questions related to this objective were designed with a multiple-choice response format. The question focusing on management objectives (Section Two, Question Four) required the respondent to identify the objectives which they considered to be most important for management of the park. In the case of Dinosaur Park, two responses were required; this was extended to three responses for Writing-on-Stone Park at the request of the planner responsible for the park, who was interested in obtaining a more detailed response regarding visitors' views on this issue. Rank-ordering of the selected items was not

required of the respondents.

The two questions dealing with park activities (Section Two, Question Six) and management preferences (Section Two, Questions Eight and Nine) were constructed using a Likert-type response scale. A three-point scale allowed visitors to indicate the relative degree of importance of each of the park activities, while a five-point scale was employed for the list of management preferences. The five-point scale provided a central referent, "Same as Now", which encouraged respondents to consider the current management situation as a frame of reference for their responses. In order to discourage guessing and random responses, an additional response option, "Don't Know", was provided for each of the items.

Certain questions were included in the questionnaire in order to obtain additional information of interest to planning and research staff of Alberta Provincial Parks. These consisted of questions on party age composition, source of information about the park, perceptions of specific park features, and views about the functions of the Preserve. These concerns were outside the scope of the present study, however, and are not included in the discussion.

H. Data Collection Procedures

The survey questionnaire constituted the principle data collection instrument for the study. In this section, the procedures involved in administering the data collection are outlined. Included in the discussion are administrative/staffing details, selection of the sample, distribution and collection of the questionnaires, as well as preparation and treatment of the data.

Administrative Details

Distribution of the self-administered questionnaire was conducted in Writing-on-Stone Park by the researcher. An assistant was hired through the Alberta Government's summer student programme (STEP) to carry out the survey distribution in Dinosaur Park. This assistant was provided with a two day training programme at the start of the sampling period in order to familiarize her with the specific sampling details of the study as well as with the general principles of survey research. In addition, the researcher observed and standardized the assistant's survey distribution techniques during these two days. Periodic checks were also conducted on a weekly or bi-weekly basis to ensure the consistency of these techniques, as well as comparability with the researcher's own distribution procedures at Writing-on-Stone Park. A brief procedures manual was also developed, which provided a reference for each of the survey workers throughout the field period.

Details covered in the training programme and manual included an introduction to be recited to visitors selected in the sample, a general approach to dealing with the public, and clerical duties associated with recording and storing the completed surveys.

Survey Sampling

The population for the study consisted of adult visitors to Dinosaur and Writing-on-Stone Provincial Parks during the summer months of 1980. The objective of the survey sampling procedure was to select some units of this aggregate in a randomized manner, so that they could be considered representative of the persons visiting these two parks. The visitors who were potential units of this sample defined the sampling frame. These were parties who arrived at the park during July and August, 1980, when the field component of the survey was being conducted. The precise sampling period defining the sampling frame for Dinosaur Park was June 27, 1980 to September 1, 1980, while the precise sampling period for Writing-on-Stone Park was July 1, 1980 to August 24, 1980. The duration of the sampling period was slightly longer for Dinosaur Park. This was the result of an administrative concern, since the principal researcher was required at Dinosaur Park to initiate and terminate the survey distribution and collection procedures being conducted there by the assistant; debriefing of the assistant was also involved at the end of this period.

In order to select the sample from this frame, a multi-stage sampling technique was employed. The first phase involved the determination of a randomized time schedule in order to ensure that visitors arriving at a variety of times had a similar probability of being selected. Visiting parties entering the park during these pre-selected periods received a questionnaire on the basis of one questionnaire per vehicle. In the second phase, one adult member of the visiting party was selected by the party members as the potential unit who might complete the questionnaire. The individuals selected in this way constituted the sample for the study.

Establishment of the randomized time schedule involved a two-stage selection procedure. For Dinosaur Park, two days per week were randomly selected as non-distribution days to allow the required weekly time-off for the research assistant. In the second stage, survey distribution times were randomly selected for the remaining designated days. For this procedure, selection was made from a pre-determined array of specified time periods, which included morning, afternoon, and evening segments. Two segments were selected for each distribution day, and surveys were distributed during these specified time periods.

In the case of Writing-on-Stone Park, certain days were again identified as non-distribution days, to allow the researcher to complete administrative tasks in Dinosaur Park. In the second selection stage, survey distribution

times were randomly selected in the same manner as for Dinosaur Park, so that visitors arriving at various times of the day would have a chance of being included in the sample.

In both parks, the survey workers were located at entrance gate booths. Within each sampling period, questionnaires were distributed to all vehicle parties entering the park. One questionnaire was alloted to each vehicle with an introductory explanation, and a request that it be completed by any adult member of the party. During exceptionally high traffic periods at Dinosaur Park, it was occasionally necessary to alter the distribution procedure slightly by distributing questionnaires to every second vehicle in order to avoid traffic congestion at the park entrance. Questionnaires were not given to organized groups or to parties who indicated that they had completed a questionnaire on a previous visit: for Dinosaur Park, this was approximately five parties and for Writing-on-Stone Park, approximately twenty parties.

Respondents completed the questionnaire at any time during their visit, and deposited it in a designated collection box as they left the park.

I. The Survey Population

The survey population consisted of those respondents who actually completed and returned the questionnaire. This aggregate constituted a proportion of those visitors who originally received the questionnaires upon entering the

park. The response rate is a comparison of these two figures, ie. number returned/number distributed x 100.

In the case of Dinosaur Park, the sample consisted of the 1470 visitors who received the questionnaire, and the survey population consisted of those 809 respondents who completed and returned it. This resulted in a response rate of 55.0 percent. The response rate for Writing-on-Stone Park was somewhat higher than this figure: the sample consisted of 830 visitors, 587 of whom completed the questionnaire, resulting in a response rate of 70.7 percent.

There was no predetermined number of responses which was identified as desirable in the pre-data collection phase. The objective of the data collection procedure was to obtain as many responses as possible during the specified time frame, given the constraints of the sampling procedures.

J. Treatment of the Data

Processing

The completed questionnaires were collected from the designated survey box on a daily basis, and coded by the survey workers in preparation for computer storage in Edmonton. Coding of the responses was done in order to transcribe the non-numerical responses into numerical form for computer storage and analysis. This was accomplished in the designated coding columns on each page of the

questionnaire, according to a pre-coding format established in the survey preparation stage; coding guidelines were documented in a coding manual for use as a reference. Editing of the questionnaires was done by the researcher. This involved coding of ambiguous responses, and spot-checking of coding accuracy.

Processing of the coded data was conducted in the Research and Systems Branch of the Alberta Recreation and Parks Department, where the information was key-punched on to cards, and transcribed on to tape for storage.

Analysis

The conventional SPSS program (Nie *et al.*, 1975) was used as the computer format for analysis of the data. The types of analyses consisted of frequency distributions, percentages, two-factor cross tabulation summary tables, and correlations.

These analyses provided descriptive information about the percentages of persons falling into particular response categories, as well as the relationships between selected dependent and independent variables. The Chi-Square (X^2) test, appropriate for nominal and ordinal data, was employed in determining the statistical significance of relationships. The basis of this statistical test is the comparison of observed cell frequencies or proportions with expected cell frequencies when two variables are summarized in a cross-tabulation format. In the preparation of these

cross-tabulations, some of the variables were recoded in order to collapse the number of response categories, so that a more meaningful picture of the variable relationships could be examined. In certain instances, the Chi Square (X^2) analyses were conducted on cross-tabulation tables using the original number of variable categories; these categories were then collapsed into meaningful groupings to facilitate presentation and discussion of results. In these cases, the number of degrees of freedom (df) reported in the text and tables refers to the analyses using the original number of crosstabulation cells [(n-1)x(n-1)], and may appear to be larger than appropriate when presented in conjunction with the collapsed variables in the results tables.

The probability level of.05 was utilized to distinguish those relationships which were likely to reflect the true situation from those simply due to chance. The results of these analyses are presented in the following two chapters.

IV. VIEWS ABOUT PRESERVATION AND RECREATION

A. Introduction

In the present chapter, findings related to the preservation and recreation orientations of Dinosaur and Writing-on-Stone Park visitors are presented. This is accomplished by examining the pattern of responses on the three indicators employed in the study: perceptions of the purpose of the park; activity preferences, and, management preferences. For each of these measures, the relative degree of support for preservation and recreation-related items is identified within each park. This procedure allows examination of the data according to the requirements of two principal study objectives. One objective is to determine if a clear pattern emerges from the cumulative evidence of these three indicators favouring either preservation or recreation planning goals for each of the two parks. The second objective is to compare the orientations of visitors to the two study parks in order to identify any similarities and differences. Two types of analyses are employed in the investigation of these two objectives: individual item analysis and composite variable analysis.

An additional objective of the study is to examine the nature of the relationships between the indicator variables, and this is accomplished through a series of correlational analyses. These results are discussed at the end of the Chapter.

B. The Preservation-Recreation Dimension

As indicated in the previous chapter, three measures were incorporated into the survey to provide an indication of the preservation-recreation orientation of park visitors: perceptions of the purpose of the park, the personal importance to the visitor of selected park activities, and expressed preferences for management programmes and development options. For each of these measures, a spectrum of items was presented, sampling some activities or programmes concerned with protection and appreciation of the park resources, and some programmes which were of an active or social recreation nature. Groupings have been developed for these items in order to provide a conceptual framework for discussion of the findings. The preservation-recreation groupings developed for the three measures are presented in Table 4.1, with the items for both Dinosaur and Writing-on-Stone Parks combined in the same table.

C. Preservation-Recreation Orientation: Dinosaur Provincial Park

In this section, the discussion focuses on the findings related to visitors' views about the preservation-recreation role of Dinosaur Provincial Park. The three measures used to investigate visitors' orientations are discussed in turn, and an overview of the results is presented at the end of the section. The data are summarized graphically in Figure 4.1.

TABLE 4.1

PRESERVATION AND RECREATION CATEGORIES

QUESTIONNAIRE ITEMS

	Preservation	**Recreation**
Objectives	-to protect an area of outstanding scenic beauty; -to protect plants and animals that are native to Alberta; -to preserve significant features (fossils/rock art) -to provide a chance to learn about park resources;	-to provide camping facilities -to provide outdoor recreation opportunities -to attract tourists.
Activities	-learning about park features such as plants and animals (and dinosaurs) -learning about the history and culture of the area -making a personal effort to protect park resources.	-camping -visiting with other people -relaxing in the shade -picnicking -playing field sports.
Management Preferences	-showing visitors how they could avoid damaging the park resources -providing more self-guided interpretive (nature) trails -provided guided tours to more areas of the park -telling visitors about the purpose of the Natural (Archeological) Preserve.	-allowing visitors to walk freely in the badlands/visit the rock art on their own as long as they register with the park staff -allowing organized trail rides (by horse) into the badlands/coulees -providing an open field suitable for sports -extending the road system so that people can drive to more areas of the park -providing more camping spaces in the park .

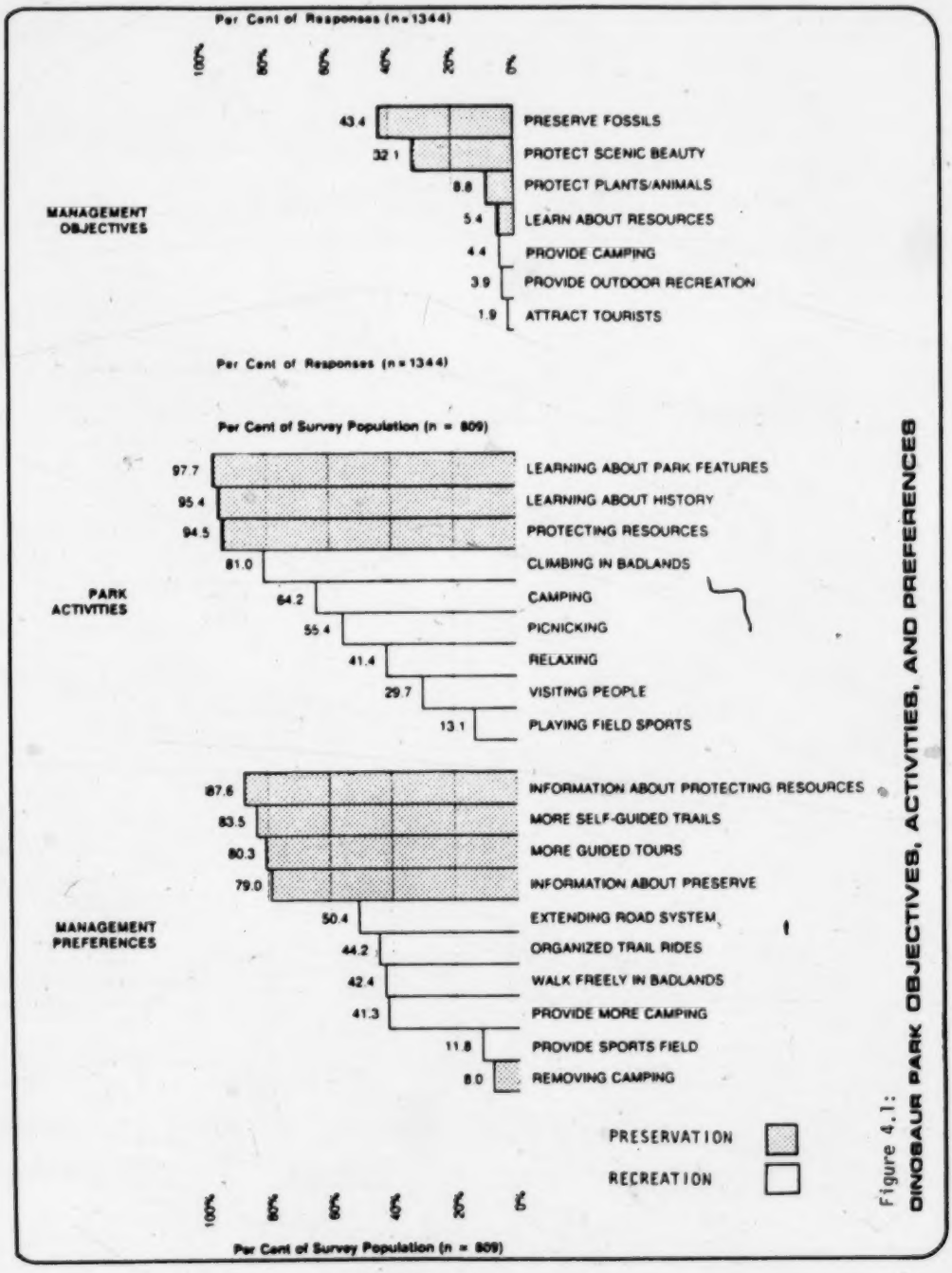


Figure 4.1:
DINOSAUR PARK OBJECTIVES, ACTIVITIES, AND PREFERENCES

Graphics by Design Branch, Alberta Recreation and Parks

Perceptions of the Park Purpose

Respondents were requested to identify two objectives which they considered most important for management of Dinosaur Provincial Park. A majority of responses which were selected focused on objectives concerned with the preservation and protection of park resources (84%, n=1134). The three items selected most frequently as important park objectives were: "to preserve significant features, such as fossils" (43.4% of responses, n=584); "to protect an area of outstanding scenic beauty" (32.1%, n=432); and "to protect plants and animals that are native to Alberta" (8.8%, n=118). The fourth-ranked objective, "learning about park resources" (5.4%, n=73), is concerned with visitor appreciation of park resources, and is also included in the "preservation" category.

In contrast, the three "recreation" objectives were selected least often by respondents. Fewer visitors perceived the principal objective of park management to be the provision of camping facilities (4.4% of responses, n=59), providing outdoor recreation opportunities (3.9%, n=52), or attracting tourists (1.9%, n=26).

Importance of Park Activities: Activity Preferences

Visitors were asked to indicate how important they considered certain activities in Dinosaur Park. Figure 4.1 summarizes the combined percentages of visitors who indicated that a particular activity was either very

important or fairly important, with the activities rank-ordered to reflect this percentage figure. A more detailed breakdown, indicating the percentage of respondents who reported that a particular activity was very important, fairly important, or not very important, is presented in Table 4.2.

The majority of respondents felt that appreciation and protection of park resources were important types of activities in Dinosaur Park. This pattern was evident in the high level of support for "preservation" items. Almost all of the respondents considered that "learning about the park's natural features" (97.7%, n=752), "learning about the history and culture of the area" (95.4%, n=741), and "making a personal effort to protect park resources" (94.5%, n=741) were very important or fairly important activities.

In contrast, activities which were in the "recreational" category, characterized as social and active, were considered important by fewer respondents. Included in this grouping were: "camping" (64.2%, n=478); "picnicking" (55.4%, n=415); "relaxing in the shade" (41.4%, n=307); and "visiting people" (29.7%, n=218). Finally, there were few visitors (13.1%, n=96) who felt that "playing field sports" was personally important in Dinosaur Park.

One item in the activity listing, "climbing in the badlands" was favoured by 81.0% of respondents (n=478). This activity is a transitional item, combining characteristics of the two activity groupings described above. Although

TABLE 4.2

ACTIVITY PREFERENCES:

PER CENT OF DINOSAUR PARK RESPONDENTS CONSIDERING ACTIVITIES

TO BE VERY, FAIRLY AND NOT VERY IMPORTANT

Activity	Very Important	Fairly Important	Not Very Important
	%	%	%
Learning about Park Features	74.3	23.4	1.7
Learning about History/Culture	67.3	28.1	4.2
Protecting Resources	71.0	23.5	3.3
Climbing in the Badlands	51.7	29.3	15.8
Camping	31.3	32.9	26.4
Picnicking	17.1	38.3	40.3
Relaxing	14.0	27.4	54.4
Visiting People	7.4	22.4	64.1
Playing Field Sports	3.1	9.9	80.0

possessing features of an active recreational nature, it also has a component of interaction with the resource which is relatively specific to the environment of Dinosaur Park. Such an interpretation may contribute to an explanation of the relative ranking of the activity between the more purely preservational and recreational items in the activity groupings.

Management Preferences

Visitors were also asked to consider a number of specific development and management suggestions, and to rate their importance. On the basis of visitors' responses, three broad preference categories were evident, with four items receiving a high level of support, four with moderate support, and two with a relatively low level of support. Figure 4.1 presents graphically the combined percentages of visitors who indicated that a particular management practice should receive a great deal of attention, or some attention from management staff. The resulting list of preferences is rank-ordered to reflect this percentage figure. A more detailed breakdown, indicating the percentage figures for all five response categories in this question is presented in Table 4.3.

The majority of park visitors appeared to be preservation-oriented in their demands for management and development programmes. This is suggested by the high level of support for four of the five items in the "preservation"

TABLE 4.3

VISITORS' PREFERENCES FOR MANAGEMENT PROGRAMMES: DINOSAUR PARK

	Percent of Park Respondents				
	A great deal of importance	Some Importance	Same as Now	Little importance	No importance
Show people how to avoid damage	64.1	23.6	10.8	0.8	0.4
Provide more self-guided trails	48.8	34.7	11.9	1.0	1.1
Guided tours to more areas	48.9	31.4	11.6	2.7	0.5
Purpose of the Natural Preserve	48.8	30.2	17.0	1.1	0.4
Extend the road system	23.8	26.6	17.6	7.0	22.3
Allowing organized trail rides	17.5	26.7	5.7	14.1	28.9
Allow visitors to walk freely in badlands	23.2	19.2	41.2	4.9	10.0
Provide more camping	14.1	27.2	25.8	14.3	11.1
Provide a sports field	2.9	8.9	16.7	30.0	38.2
Remove camping	4.2	3.8	29.1	10.1	43.4

category. These included:: "showing visitors how they could avoid damaging the park resources" (87.6% of respondents, n=651), "providing more self-guided trails" (83.5%, n=613), "providing guided tours to more areas of the park" (80.3%, n=588), and "telling people more about the purpose of the natural preserve" (79.9%, n=580). In contrast, however, the fifth "preservation" item, "removing camping from the park", was felt to be important by only 8.6% of the visitors (n=55). Thus, although the majority of visitors supported practices associated with resource protection and appreciation, they nevertheless did not consider removal of camping from the park to be an important management programme.

A moderate level of support was evident for those management practices for which visitors' opinions were more evenly divided. The four programmes receiving moderate levels of support are from the "recreational" category, and represent increased accessibility to park resources, and expanded support facilities. These items included: "extending the road system to more areas of the park" (considered important by 50.4% of respondents, n=375); "allowing organized trail rides into the badlands" (44.2%, n=320); "allowing visitors to walk freely in the badlands as long as they registered with the park staff" (42.4%, n=313); and "providing more camping spaces in the park" (41.3%, n=302). A fifth "recreational" item, "providing an open field suitable for sports activities" was considered

important by a small number of respondents (11.8%, n=85).

Dinosaur Provincial Park: Overview

One of the principal objectives of the study was to determine the preservation-recreation orientation of visitors to Dinosaur Provincial Park. Evidence for this orientation was obtained by examining visitors' responses on the three indicators discussed above. A similar pattern was evident for responses on all three measures, with visitors favouring those items which were most clearly suggestive of a preservation orientation. Thus, preservation objectives were most frequently identified as the main purpose of the park; and protection of resources and interpretation were considered as important activities by the majority of respondents. Similarly, a high level of support was evident for specific development and management options concerned with resource protection and expansion of interpretive opportunities. In contrast, objectives, activities, and preferences which were in the "recreational" category, and oriented toward active/social opportunities, and access to resources, were considered important by fewer respondents across all three indicators.

The cumulative evidence observed in this pattern of responses suggests that visitors' views were highly preservation-oriented in relation to Dinosaur Provincial Park. The moderate and low levels of support for items of a "recreational" nature suggest that fewer visitors maintained

a recreational orientation with respect to this park. Furthermore, the degree of consistency across all three measures, with relatively high levels of support for preservation-oriented items and lower support for those in the recreational category, provides some indication of the existence of a positive relationship among the three indicator variables: perceptions of park purpose, activity preferences, and management preferences. This relationship is investigated further in a subsequent section of this chapter.

D. Preservation-Recreation Orientation: Writing-on-Stone Provincial Park

In this section, findings related to visitors' orientation toward Writing-on-Stone Provincial Park as a preservation or recreation resource are presented. The results are discussed in a format similar to the previous presentation for Dinosaur Park. Each of the three measures or indicators of visitors' orientations is presented in turn; these data are summarized graphically in Figure 4.2.

Perceptions of the Park Purpose

Respondents were requested to identify three objectives which they considered most important for management of Writing-on-Stone Park. A majority of responses (71.5%, n=1066) endorsed "preservation" objectives concerned with the preservation or protection of park resources. The three

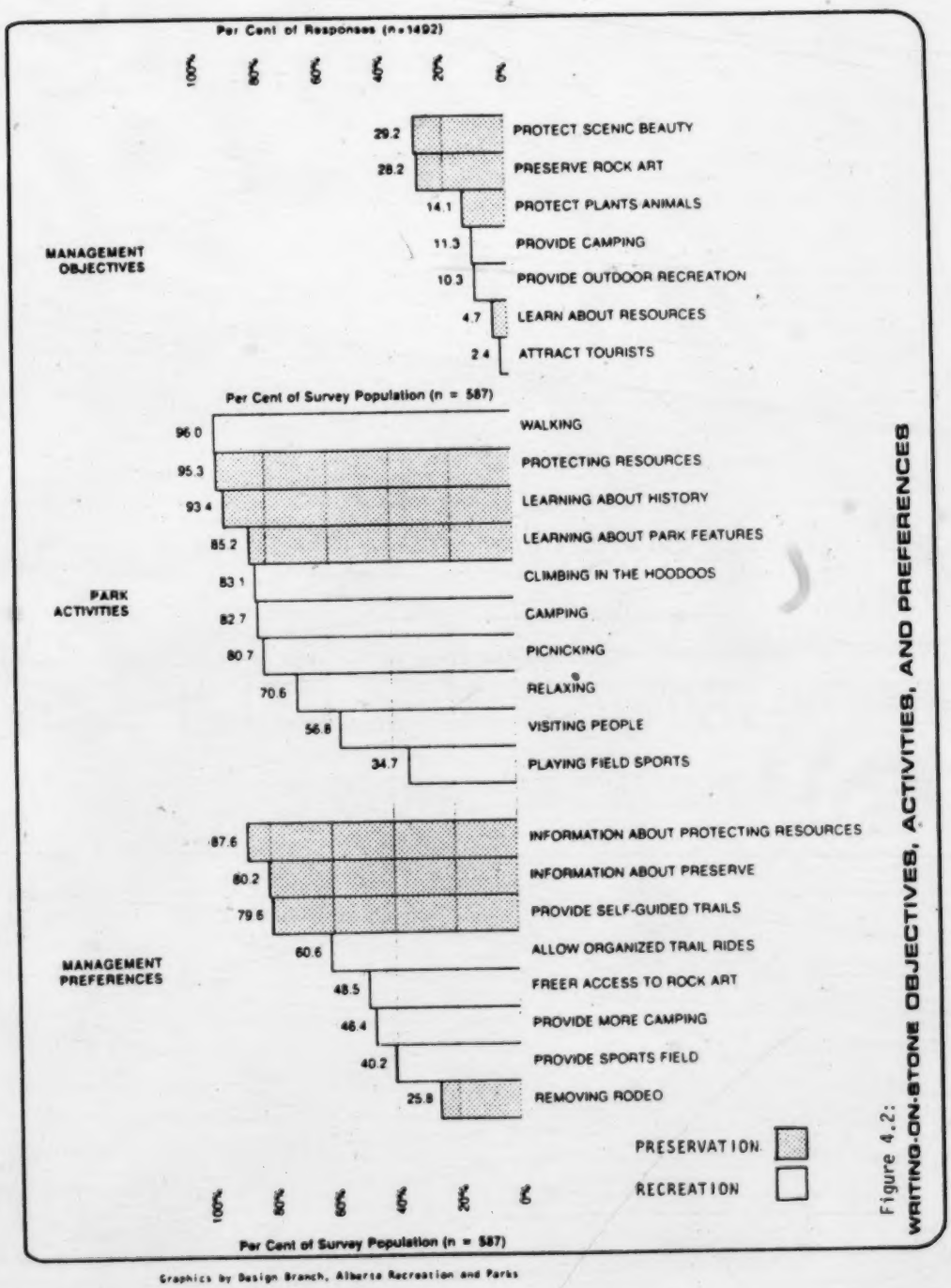


Figure 4.2: WRITING-ON-STONE OBJECTIVES, ACTIVITIES, AND PREFERENCES

Graphics by Design Branch, Alberta Recreation and Parks

items selected most often as important park objectives were: "to protect an area of outstanding scenic beauty" (29.2% of responses, n=436); "to preserve significant features such as Rock Art" (28.2%, n=420); and "to protect plants and animals that are native to Alberta" (14.1%, n=210). However, visitors indicated a relatively low support for the fourth "preservation" objective. Only 4.7% (n=70) identified the item "to provide a chance to learn about park resources" as an important park objective.

Two objectives, oriented toward the provision of recreation opportunities, appeared to be of moderate importance since they were selected by fewer respondents. The item, "to provide camping facilities" was selected in 11.3% of responses (n=168). Similar support was evident for the item "to provide outdoor recreation opportunities", which was selected in 10.3% of responses (n=153). Finally, a lower level of support was evident for the remaining objective, with only 2.4% of responses (n=35) indicating that "attracting tourists" was important.

Importance of Park Activities: Activity Preferences

Visitors were asked to indicate how important they personally considered certain activities in Writing-on-Stone Park. Figure 4.2 presents the combined percentage of visitors who indicated that a particular activity was either very important, or fairly important. The resulting list of activities is thus rank-ordered to reflect this percentage

figure. A more detailed breakdown, indicating the percentage of respondents who reported that a particular activity was either very important, fairly important, or not very important, is presented in Table 4.4.

The responses suggested that activities oriented toward the protection and appreciation of park resources were somewhat more important to park visitors than activities of a recreational nature. This picture was evident on responses to the "preservation" items, which were considered important by a large number of park visitors. Almost all respondents (95.3%, n=504) considered that "making a personal effort to protect park resources" was important. A high percentage of visitors also placed a great deal of importance on "learning about the historical and cultural attractions of the area" (93.4%, n=508), as well as upon "learning about natural park features such as plants and animals" (85.2%, n=449).

A large proportion of park visitors also appeared to consider activities in the "recreational" category to be important. This was suggested by the degree of support for the following items: "camping" (considered important by 82.6% of respondents, n=442); "picnicking" (80.7%, n=434), and "relaxing in the shade" (70.6%, n=382). The remaining "recreational" items, "visiting with other people" (56.8%, n=302), and "playing field sports" (34.7%, n=182) were considered important by a smaller number of visitors.

In addition, "walking" appeared to be the most popular activity, with almost all of the respondents (96.0%, n=525)

TABLE 4.4

ACTIVITY PREFERENCES: WRITING-ON-STONE PROVINCIAL PARK

	Percent of Respondents		
Activity	Very Important	Fairly Important	Not Very Important
Walking	62.0	34.0	2.9
Protecting Resources	75.0	20.2	2.3
Learning about History/Culture	65.1	28.3	5.0
Learning about Park Features	44.0	41.2	10.4
Climbing in the hoodoos	55.8	27.3	13.3
Camping	54.8	27.9	11.4
Picnicking	38.7	42.0	16.2
Relaxing	39.6	31.1	27.2
Visiting People	24.1	32.7	38.5
Playing Field Sports	8.4	26.3	58.8

indicating its personal importance. A transitional item, with elements of recreation as well as direct interaction with the specific resources of Writing-on-Stone Park, was also ranked highly by visitors. This item, "climbing in the hoodoos" was considered important by 83.1% of respondents (n=451).

Management Preferences

Visitors were also asked to consider a number of specific development and management suggestions, and to rate their importance. On the basis of visitors' responses, three broad preference categories were evident. There were three programmes which received a high level of support, four which had moderate support, and one which had a relatively low level of support. Figure 4.2 presents the combined percentage of visitors who indicated that a particular management practice should receive a great deal of attention, or some attention from management staff. The resulting list of preferences is thus rank-ordered to reflect this percentage figure. A more detailed breakdown, indicating the percentage figures for all five response categories in this question is presented in Table 4.5.

Management programmes in the "preservation" category received the highest level of support from park visitors. The programme, "showing visitors how they could avoid damaging the park resources" was considered important by 87.6% of respondents (n=447), while 80.2% (n=413) felt that

TABLE 4.5

VISITORS' PREFERENCES FOR MANAGEMENT PROGRAMMES:

WRITING-ON-STONE PARK

	Percent of Park Respondents				
	A great deal of importance	Some Importance	Same as Now	Little importance	No Importance
Show people how to avoid damage	67.3	20.4	9.0	1.0	0.8
Purpose of the natural preserve	55.3	24.9	15.5	2.1	0.4
Providing self-guided trails	45.0	34.5	12.5	3.0	2.4
Allowing organized trail rides	26.1	34.5	7.1	8.2	14.9
Allow visits to rock art	31.2	17.4	32.9	3.9	12.2
Provide more camping	16.6	29.8	28.0	11.0	7.3
Provide a sports field	13.0	27.2	19.2	20.4	15.8
Remove the rodeo	18.6	7.2	17.4	7.8	16.8

management should place more importance on "telling visitors . . . about the purpose of the preserve." Also included in this grouping was the item, "providing self-guided interpretive trails", which 79.6% of respondents (n=401) felt should merit the attention of management. However, one activity included in the preservation category received a fairly low level of support. Only a quarter of the visitors (25.8%, n=129) felt that "removing the rodeo grounds from the park" was important.

A moderate level of support was evident for those practices which were included in the "recreational" grouping. These included: "allowing organized trail rides into the coulees" (considered important by 60.6% of respondents, n=309); "allowing people to visit the rock art on their own as long as they register with the park staff" (48.5%, n=246); "providing more camping spaces in the park" (46.4%, n=235); and "providing an open field suitable for sports activities" (40.2%, n=201).

It is evident from this pattern that a majority of visitors preferred "preservation" practices oriented toward protection and appreciation of park resources. Despite the emphasis on resource protection, however, most visitors did not appear to consider removal of the rodeo grounds to be important. Opinion was more evenly divided for those "recreational" programmes which represented freer access to more areas of the park, and expanded recreational opportunities.

Writing-on-Stone Provincial Park: Overview

Three indicators were used to examine the degree to which visitors' perceptions and preferences were indicative of a preservation or recreational orientation with respect to Writing-on-Stone Park. A similar pattern was evident for responses on all three measures, with visitors favouring those items which were most clearly supportive of preservation and resource appreciation. Management objectives and development preferences which were more oriented toward recreational use and increased access to park resources were considered important by fewer respondents. Although "recreational" activities ranked second in importance to "preservation" activities when activity preferences were considered, the responses indicated that certain active and social activities were important to a considerable proportion of park visitors.

Overall, visitors to Writing-on-Stone Provincial Park appeared to be strongly oriented toward a preservation view of the park resources. The relative ranking of response items across the three measures indicates that fewer visitors have a "recreational" orientation with respect to the park. This pattern is consistent across all three measures, again suggesting that the three variables, perceptions of the park purpose, activity preferences, and management preferences may be related in a positive manner. The degree of support for activities of a "recreational" nature appears to be greater than for perceptions and

management preferences falling into this category, however. The degree of association among these variables is investigated in greater detail in a subsequent section of this chapter.

E. Comparison of Findings for Dinosaur and Writing-on-Stone Parks

In the previous sections, visitors' orientations toward Dinosaur and Writing-on-Stone Provincial Parks have been described. The discussion provided an overview of the degree to which visitors viewed each park as a preservation or recreation resource. When examined in detail, certain similarities and differences appear in the response patterns for the two parks, and these provide the focus for the discussion in this section. The results of the statistical comparisons of these responses are presented in Tables 4.6 and 4.7.

The most evident similarity is the relative importance of preservation and recreation functions for the two parks. In both cases, the majority of visitors favoured management objectives, programmes, and park activities which were in the "preservation" category, reflecting concern with resource protection and appreciation of resources through interpretation. In contrast to the relative support for the preservation role of the two parks, visitors to both parks appeared to consider the provision of recreation opportunities to be of secondary importance. Thus, a smaller

TABLE 4.6

PARK COMPARISONS:

PROPORTIONS OF DINOSAUR AND WRITING-ON-STONE PARK RESPONDENTS

CONSIDERING PRESERVATION ITEMS TO BE IMPORTANT

	Dinosaur Park	Writing-on-Stone Park	Chi-Square
Park purpose/objectives:		**Percent of Responses**	
Preserve fossils/rock art	43.4	28.2	70.2, 1df***
Protect scenic beauty	32.1	29.2	3.48, 1df.n.s.
Protect plants and animals	8.8	14.1	21.69,1df.***
Learn about park resources	5.4	4.7	.91,1df.n.s.
Park activities:		**Percent of Respondents**	
Learning about park features	97.7	85.2	70.9,2df***
Learning about history/culture	95.4	93.4	6.16,2df.*
Protecting park resources	94.5	95.3	1.37, 2df,n.s.
Management Preferences:		**Percent of Respondents**	
More information about protecting park resources	87.6	87.6	5.05,2df,n.s.
More self-guided trails	83.5	79.6	3.59,2df,n.s.
Information about the preserve	79.0	80.2	.78,2df,n.s.
Remove camping/rodeo grounds	8.0	25.8	212.23,2df***
More guided tours	80.3	n/a	n/a

* Significant at p.≤.05 level
** Significant at p.≤.01 level
*** Significant at p.≤.001 level
n.s. Not significant at p.≤.05 level

TABLE 4.7

PARK COMPARISONS:

PROPORTIONS OF DINOSAUR AND WRITING-ON-STONE PARK

RESPONDENTS CONSIDERING RECREATION ITEMS

TO BE IMPORTANT

	Dinosaur Park	Writing-on-Stone Park	Chi-Square
Park purpose/objectives		**Percent of Responses**	
Provide camping	4.4	11.3	46.60,1df.***
Provide outdoor recreation	3.9	10.3	18.07, 1df***
Attract tourists	1.9	2.4	1.11,1df. n.s.
Park activities	**Percent of Respondents**		
Camping	64.2	82.7	54.26, 2df***
Picnicking	55.4	80.7	93.30, 2df.***
Relaxing	41.4	70.6	107.58, 2df***
Visiting People	29.7	56.8	93.75, 2df***
Playing field sports	13.1	34.7	84.27, 2df***
Climbing in the badlands/hoodoos	81.0	83.1	1.75, 2df.n.s.
Management preferences	**Percent of Respondents**		
Allowing organized trail rides	44.2	60.6	42.08, 2df***
Walk freely in badlands/to rock art	42.4	48.5	6.50, 2df*
Provide more camping	41.3	46.4	3.26, 2df, n.s.
Provide more sports fields	11.8	40.2	137.56, 2df***
Extending the road system	50.4	n/a	n/a

* Significant at p≤.05 level
** Significant at p≤.01 level
*** Significant at p≤.001 level
n.s. Not significant at p≤.05 level

percentage of respondents selected recreation objectives, or considered recreational activities and programmes to be important.

Although this overall pattern is evident when responses for Dinosaur and Writing-on-Stone Parks are compared, some differences appear in the relative strengths of visitors' preservation and recreation orientations for the two parks. The proportions of respondents who considered "preservation" objectives, activities, and management programmes to be important are fairly comparable for the two parks. When the "preservation" category is examined for each of the three measures, significant differences between parks are found on only five of the thirteen items, and no consistent pattern appears to differentiate the preservation orientations of visitors to the two parks. In the case of park purpose/management objectives, a mixed picture was evident, with Dinosaur Park visitors showing greater concern for preservation of the significant park features (fossils), (X^2=70.2, df=1, P≤.01), and a greater proportion of Writing-on-Stone Park respondents endorsing the objective of protecting plants and animals native to Alberta (X^2=21.69, df=1, P≤.01). When specific activities were compared, the analysis indicated that a greater proportion of Dinosaur Park respondents considered the two learning activities to be important. The final item on which a significant difference appeared between the two parks was related to the removal of existing park developments (ie., camping in

Dinosaur Park, and the rodeo grounds in Writing-on-Stone Park). There was stronger support for this proposal from Writing-on-Stone Park respondents (X^2=212.23, 2df, p.≤.01).

In contrast to this picture, ten of the twelve items in the "recreational" category were shown to have significant differences when responses of Dinosaur and Writing-on-Stone Park visitors were compared. Furthermore, a consistent pattern appears to be evident across all three measures, with "recreational" items receiving more support from Writing-on-Stone Park respondents. As indicated in Table 4.7, the percentage of responses associated with camping and outdoor recreation objectives were significantly higher for Writing-on-Stone Park when compared to responses of Dinosaur Park visitors. A similar pattern is evident when the importance of park activities is considered. The proportions of Dinosaur Park visitors who consider recreational activities to be important range between 13.1% for "playing field sports" to 64.2% for "camping." For Writing-on-Stone Park, these proportions are higher, ranging from 34.7% for "field sports" to 82.7% for "camping." Significant differences were found for each recreational activity when data were compared statistically for the two parks. Consequently, a higher proportion of Writing-on-Stone Park visitors indicated that these recreational activities were important, while a greater percentage of Dinosaur Park visitors considered them not to be important.

A similar pattern also occurs when preferences for management practices are compared. The proportions of Writing-on-Stone Park visitors who considered recreation programmes to be important range from 40.2% to 60.6%, whereas the proportions for Dinosaur Park visitors are somewhat lower, varying from 11.8% to 50.4%. Significant differences were found for three of the four recreation items, confirming that a greater proportion of Writing-on-Stone Park visitors considered them to be of managerial importance. The remaining item, "demand for additional camping facilities", was comparable for both parks.

These findings suggest that visitor orientation toward preservation is fairly comparable for both Dinosaur and Writing-on-Stone Parks. However, for all three measures considered, visitors to Writing-on-Stone Park appear to place more importance on the role of recreation in the park, than do visitors to Dinosaur Park.

An additional point of interest is the consistency in relative ranking of specific activity and management preference items when data for the two parks are compared. The rank-ordering of recreational activities is identical, descending in order of importance from "camping" to "playing field sports." Similarly, the rank-ordering of recreational management practices is also consistent for the two parks, descending in relative importance from the item "allowing organized trail rides" to "providing more sports fields."

This consistency may reflect the similarity in perceptions and preferences which visitors hold about two fairly comparable parks within the Alberta Provincial Park system. On the other hand, this pattern may represent an over-riding consistency in rank-ordering which visitors may apply to all park environments. Clarification of this issue is beyond the scope of this study, however, since the research was limited to the investigation of the two specific parks, and did not extend to other types of parks within the system.

Further investigations regarding the orientations of Dinosaur and Writing-on-Stone Park visitors will be undertaken in a later section of this chapter, and in Chapter Five, in an attempt to understand the factors contributing to the variations reported above.

As a basis for these analyses, composite variables aggregating individual questionnaire items, were developed; this technique is outlined in the following section.

F. Development of Composite Variables

In order to further refine this picture of visitors' preservation and recreation orientations, a series of composite variables or factors was developed, and employed in subsequent analyses. This involved a three-stage process: in the first stage, items were grouped according to the categories outlined in Table 4.1. This resulted in six factors:

1. Preservation objectives;
2. Preservation activities;
3. Preservation management preferences;
4. Recreation objectives;
5. Recreation activities; and
6. Recreation management preferences.

In the second stage, the respondents' responses on each of the items in the category were treated additively, so that every respondent had a total "score" on each of the factors. Respondents were then rank-ordered according to their scores, and grouped into two categories on the basis of this total score, so that those expressing "High" and "Low" support, or strong and weak orientation with respect to each factor, could be identified.

In the first set of analyses employing these composite variables scores, the proportions of Dinosaur and Writing-on-Stone Park visitors who consistently expressed strong support for preservation or recreation factors, were compared, in order to substantiate the findings reported in the previous section.

G. Composite Variables: Comparison of Findings for Dinosaur and Writing-on-Stone Parks

In order to further refine the comparisons of visitors' orientations toward the resources of Dinosaur and Writing-on-Stone Provincial Parks, composite variables were compared across parks. This approach complements the

individual item analysis presented in previous sections, by identifying groups of respondents who expressed strong preservation or recreation orientations in each park, and comparing the proportions across parks. This technique also forms the basis for the analysis in Chapter Five, which attempts to define those visitor and visit characteristics which are associated with varying degrees of support for preservation and recreation factors.

In this analysis, the proportions of visitors who expressed a strong, or weak, support for each of the composite preservation and recreation factors were compared in a cross-tabulation format across parks. Comparisons were possible, however, for only four of the six indicator variables. No comparisons were possible with this technique for the preservation and recreation park objectives factor, as a result of critical differences in the data-collection methodology for the two parks on the specific "park purpose" question (Section Two, Question Four). For Dinosaur Park, respondents were requested to select two items from an array of seven items, while Writing-on-Stone Park respondents were requested to select three items from an identical array. Since the composite variables were developed in an additive manner, the two and three item composite groupings could not be compared across parks due to the probability of choice differences arising from the initial measurement.

When the proportions of respondents expressing high and low support for preservation activities were compared, a

significant difference was found between Dinosaur and Writing-on-Stone Parks (see Table 4.8). A higher proportion of Dinosaur Park visitors (85.3%) was strongly preservation-oriented, compared to 76.5% of the Writing-on-Stone Park respondents. No significant difference was evident, however, in the proportions of respondents expressing strong support for developments and programmes of a preservation nature.

When the recreation indicator variables were examined, a greater proportion of Writing-on-Stone Park respondents was found to be strong supporters, when compared to Dinosaur Park respondents, reinforcing the pattern reported in Section IV (E). Thus, 38.5% of Writing-on-Stone respondents expressed a high level of support for recreation activities, compared to 18.6% of Dinosaur Park visitors. Similarly, more Writing-on-Stone Park respondents (51.8%) expressed strong support for recreational developments and programmes, compared to 42.4% of the Dinosaur Park respondents.

Overall, these findings add further support to the conclusions about differences in orientation between visitors to Dinosaur and Writing-on-Stone Parks, which were outlined in Section IV(E). As reported previously, a greater proportion of Writing-on-Stone Park visitors expressed a recreational orientation when compared to Dinosaur Park visitors. In contrast, a greater proportion of Dinosaur Park visitors were supportive of preservation-oriented activities, as indicated on two of the three individual

TABLE 4.8

COMPARISONS BETWEEN DINOSAUR AND WRITING-ON-STONE PARKS:

PROPORTIONS OF RESPONDENTS SHOWING STRONG PRESERVATION OR

RECREATION ORIENTATIONS ON COMPOSITE VARIABLES

Variable	Dinosaur Park %	Writing-on-Stone Park %	Chi-Square
Preservation Objectives	n/a	n/a	
Preservation Activities	85.3	76.5	16.3, 1df***
Preservation Management Programmes	83.5	80.1	2.38, 1df n.s.
Recreation Objectives	n/a	n/a	
Recreation Activities	18.6	38.5	57.0, 1df ***
Recreation Management Programmes	42.4	51.8	10.5, 1df **

** Significant at p≤.01 level
***Significant at p≤.001 level
n.s. Not significant at p≤.05 level

activity items, and reflected in the overall degree of support on the composite "preservation activity" variable.

H. Degree of Association Among Indicator Variable Pairs

One objective of the study was to examine the degree to which the three indicator variables - objectives, activity preferences and preferences for management programmes were associated with each other. This investigation was intended to provide a picture of the degree to which knowledge of a visitor's response on one indicator variable would allow the prediction of the visitor's response on another indicator variable employed in this study. This approach attempts to address two issues arising out of previous outdoor recreation research, concerning the use of activity preferences both as an indicator of perception of place (eg., Lee, 1972), and as a predictor of demand for facilities and programmes (eg., Jackson, 1980).

In order to examine these issues, the interrelationships of activity preferences with the two remaining factors, perceptions of park purpose/objectives, and preferences for management programmes, were determined. The analysis was also extended to examine the relationship of the third variable pair, perception of park purpose and development preferences. The degree of association between the variable pairs was assessed by the statistical measure, Spearman's correlational coefficient, which is a non-parametric correlational technique comparing a person's

ranking on one variable with his or her rank-ordering on a second variable. Specifically, in this analysis, the ranking of the respondents' composite or additive scores on each variable was compared in a series of correlational analyses. Data for each park were analyzed separately using this technique. A summary of the Spearman correlation coefficients for the twelve comparisons (six per park) is presented in Table 4.9.

When relationships among the variable pairs were examined, it was evident that most of the correlations were in the moderate to low range. The strongest degree of association occurred when activity preference scores were related to the respondents' views on park development and management programmes. For the variable pair, recreation activities and development preferences, the correlation coefficients were .318 and .404 for Dinosaur and Writing-on-Stone parks respectively. For the preservation factors, activity preferences and development preferences were somewhat lower (.256 for Dinosaur Park and .171 for Writing-on-Stone Park).

A similar pattern was evident when the relationship of activity preferences to perceptions of the park purpose was investigated. The degree of association was somewhat higher when recreational activity preferences and recreational park objectives were paired, as compared to preservation activities and objectives (Spearman's r of .242 and .307 for recreation variables, as compared to .119 and .244 for

TABLE 4.9

DEGREE OF ASSOCIATION FOR INDICATOR VARIABLE PAIRS

Variable Pairs	Correlation Coefficients	
	Spearman's r	
	Dinosaur Park	Writing-on-Stone Park
Preservation Activities - Preservation Objectives	+.119	+.244
Recreation Activities - Recreation Objectives	+.242	+.307
Preservation Activities - Preservation Developments	+.256	+.171
Recreation Activities - Recreation Developments	+.318	+.404
Preservation Objectives - Preservation Development	+.104	+.066
Recreation Objectives - Recreation Developments	+.123	+.237

preservation variables).

Although the degree of association between the third variable pair, perceptions of park purpose and development preferences was relatively weak, overall, the recreational factors appeared once again to be more strongly related than the preservation perception and development factors (Spearman's r of .123 and .237 for recreation factors, compared to .104 and .066 for preservation factors).

A review of these data suggest that there is a moderate degree of consistency between the stated activity preferences of park visitors and their stated preferences for future park developments and programmes, as well as their perceptions of the park objectives. This pattern was strongest for recreational factors, and somewhat less consistent when preservation factors were examined.

I. Summary and Conclusions

The first objective of this study was to examine the preservation and recreation orientations of visitors to Dinosaur and Writing-on-Stone Parks. Such an analysis was intended to provide user-based information useful for planning decisions regarding the two parks, where protection of unique resources and the provision of regional recreation opportunities were two major considerations. This was accomplished by examining the pattern of visitors' responses on three indicator variables: perceptions of the purpose of the park, activity preferences, and management preferences.

This approach also allowed comparisons between the two parks, and formed the basis for further analyses (reported in Chapter Five) investigating socio-demographic and visit factors associated with variations in preservation and recreation orientation.

The results of the analyses indicated that, overall, the majority of visitors to both Dinosaur and Writing-on-Stone Parks favoured management objectives, park activities and programmes which were of a preservation nature. Recreation objectives and opportunities appeared to be of secondary importance for visitors to both parks. However, differences were evident in the strength of these orientations when comparisons were made between the two parks, both on individual item analysis, and for composite variables comprised of these individual items. More Dinosaur Park visitors expressed strong preferences for activities of a preservation nature, whereas a greater proportion (though not a majority) of Writing-on-Stone Park visitors favoured activities and development programmes which were in the recreational category.

Such findings would have planning implications for the two parks, since they provide an indication of the degree of support which preservation-related policies and programmes might receive from the user clientele, and suggest that different planning considerations are required for the two parks. In addition, the cumulative evidence from the three indicator variables supports the contention of Cheek and

Field (1977), and McCool (1978) that recreation places are defined not only by their resource base and facilities, but the meanings which are attributed to them by the user clientele. In the case of Writing-on-Stone Park, in particular, a significant proportion of the park visitors perceive the park to be a location for active and social recreational activities in addition to a site with preservation values of an historical and educational nature.

A further objective of the study was to investigate the nature of relationships among the indicator variables. In several previous studies, recreation behaviours and activity preferences were found to be related to demand for facilities and programmes (Jackson, 1980; Lucas, 1964; Oliver, 1974; Wong, 1979), and there appeared to be a reciprocal relationship between activity preferences and perceptions of resource attributes (Bryan and Jansson, 1973; Lucas, 1964). When associations between perceptions and management preferences were examined, evidence for a consistent relationship did not appear in the studies reviewed (Echelberger *et al.*, 1974; Hendee *et al.*, 1968; West, 1981).

In the present study, a measure of degree of association (Spearman's r correlation coefficient) was applied to investigate the relationships between these variable pairs. This approach providing a more direct measure of association than previous studies had, since it assessed the consistency of an individual's responses on

each variable in the pair, rather than determining group aggregate response trends.

Correlations between the six variable pairs examined by this method were in the moderate to low range. The strongest degree of association occurred for the activity preference and development preference variables, and a slightly weaker association was evident for the activity preference and perception variable pairs. Correlations were low for the variables, perception of park purpose and development preferences. Overall, the degree of association between pairs of indicator variables was strongest when recreational factors were considered, and somewhat weaker for preservation factors.

This pattern of differential degree of association between the variable pairs related closely to previous research findings, where the evidence was strongest for the relationship of recreation activities to expressed preferences for development, and weakest for the relationship of perceptions to management preferences. These results lend support to the view that stated activity preferences serve as a reasonable indicator of recreational demand, especially where activities are of a recreational and social nature. However, given the moderate degree of association between activity and management preference responses, both measures would appear necessary to provide users with opportunities to express both actual and latent demand for recreation experiences and facilities.

The weaker relationship of perceptions to activity preference raises some questions regarding the use of expressed or observed activity preferences as indicators of perception of place. This finding is similar to the pattern reported by Sadler (1970) who found that visitors to a national park perceived the preservation nature of the park, but that their recreation behaviours were inconsistent with this view. The low correlation between perceptions of park objectives and preferences for management in this study is similar to the pattern evident in the studies of Echelberger *et al.* (1974) and West (1981). This picture suggests that, although a knowledge of users' perceptions may provide some valuable information in understanding the nature of recreationists' behaviour, this knowledge would appear to have little value as a predictive measure of demand for management programmes and development options.

Objectives one, two, and five have been addressed in this Chapter, and park visitor orientations with respect to two study parks have been identified. In order to understand the nature of these orientations, investigations of related factors are required; this is undertaken in the following chapter (Chapter Five), where findings focusing on the relationship of socio-demographic and visit characteristics to park orientations are presented.

V. FACTORS ASSOCIATED WITH PRESERVATION AND RECREATION ORIENTATIONS

A. Introduction

In the previous chapter, response patterns on three indicators were examined and compared in an attempt to determine the preservation and recreation orientations of visitors to Dinosaur and Writing-on-Stone Provincial Parks. Although visitor orientation toward preservation of park resources was consistently dominant for the two parks, visitors to Writing-on-Stone Park appeared to give greater support to recreation as a secondary function of the park than did Dinosaur Park visitors. Furthermore, a greater proportion of Dinosaur Park respondents expressed a preservation orientation in their preferred activities, compared to Writing-on-Stone Park visitors. In contrast, a greater proportion of Writing-on-Stone Park visitors expressed a recreation orientation in their perceptions, activity preferences, and preferences for management programmes.

Previous research has suggested that such variations in orientation toward outdoor recreation environments may be associated with differences in definable characteristics of the users, such as socio-demographic and trip characteristic factors. Further analyses were, therefore, undertaken in order to determine which factors might be related to the differences in orientation shown by park visitors in this

study.

The first stage of this process was to compare the socio-demographic and visitation profiles of the visitors to the two parks. In this way, factors could be identified on which the two survey populations varied. In the final stage, each of these factors was then further investigated to determine if it contributed to the overall park differences in orientation outlined in Chapter Four. The results of these analyses are presented in the following sections.

B. Comparison of Visitor Characteristics: Dinosaur and Writing-on-Stone Provincial Parks

Profiles of the survey populations for the two parks were derived from responses to a number of questions concerned with socio-demographic and visitation characteristics. These questions were included in Section Three, and Sections One and Two of the questionnaire, respectively. In this section, the characteristics of the survey populations for Dinosaur and Writing-on-Stone Parks are compared, summarizing the results of cross-tabulation analyses on each of the nine socio-demographic and visitation variables. Such an analysis represents an initial step in understanding some of the similarities and differences in visitors' preservation and recreation views, which emerged in the previous Chapter.

The results pertaining to the socio-demographic variables are presented initially. When Dinosaur Park and

Writing-on-Stone Park respondents were compared, significant differences were found on four of the five variables on the basis of the Chi-Square (X^2) statistic. These were: age, education, income, and location of residence. There were no significant differences when the proportions of male and female respondents were compared for the two parks. These socio-demographic data are presented in Table 5.1., and descriptive summaries of these findings are provided in the following discussion.

Age (X^2=16.76, 2df, p.≤.001): Respondents provided their exact age in years, and were classified into one of three age groupings for the purpose of analysis: respondents aged twenty-nine years and under, those between thirty and forty-nine years of age, and those aged fifty years and over. The proportions of respondents in each of these age categories was then compared for the two parks. It was determined that a higher proportion of Writing-on-Stone Park visitors were in the younger age category, below 30 years (33.4% as compared to 24.4% for Dinosaur Park), whereas a higher proportion of Dinosaur Park visitors were in the middle (30-49 years) age category (52.0% compared to 41.6% for Writing-on-Stone Park). The proportions of respondents who were 50 years of age and over were comparable for both parks.

Education (X^2=8.06, 3df, p.≤.05): Respondents were requested to indicate the highest level of education that they had completed. For the purpose of this analysis, the

TABLE 5.1

SOCIO-DEMOGRAPHIC CHARACTERISTICS OF

DINOSAUR AND WRITING-ON-STONE PARK VISITORS

Variable		Dinosaur Park % of respondents	Writing-on-Stone Park % of respondents	Chi-Square
Sex	Male	47.5	52.7	.0756, 1df, n.s.
	Female	52.5	47.3	
Age	29 years and under	24.4	33.4	16.76, 2df ***
	30 to 49 years	52.0	41.6	
	50 years and over	23.6	25.0	
Education	High School or less	35.9	42.5	8.06, 3df *
	College/University	57.7	49.8	
	Trade School/Other	6.4	7.7	
Income	$10,000 to $20,000	26.7	37.1	18.51, 4df ***
	$20,001 to $35,000	45.7	42.8	
	$35,001 and over	27.6	20.1	
Location of Residence	Local (0 to 100 miles)	11.3	42.4	213.65, 2df ***
	Alberta (over 100 miles)	40.9	40.2	
	Out-of-Province	47.9	17.5	

* Significant at p≤.05 level
*** Significant at p≤.001 level
n.s. Not significant at p≤.05 level

original category groupings were combined into three educational categories: high school completion and less; university, college or technical school attendance; and, trade school training. A higher proportion of Writing-on-Stone Park visitors reported an educational level of high school or less (42.5%), compared to the proportion of Dinosaur Park respondents (35.9%). In contrast, a greater proportion of Dinosaur Park visitors had been involved in post-secondary schooling at a university, college or technical school (57.7%) as compared with Writing-on-Stone Park visitors (49.8%).

Income (X^2=18.51, 4df, p.≤.001): Respondents were requested to report their total household yearly income by indicating one of several broad income categories. These categories were reduced to three income groupings for the analysis: low income (under $20,000 per year); middle income ($20,001 to $35,000); and, high income (over $35,001). A higher proportion of Writing-on-Stone Park visitors earned less than $20,000 per year (37.1%) as compared to the proportion of Dinosaur Park visitors in this category (26.7%). The proportions of respondents from each park who reported earnings in the mid-income category ($20,001 to $35,000) were quite comparable (45.7% and 42.8% for Dinosaur and Writing-on-Stone Parks, respectively). A greater percentage of Dinosaur Park respondents was in the higher income category, however, with 27.6% earning $35,001 or more, compared to 20.1% of the Writing-on-Stone Park

respondents.

Location of Residence (X^2=213.65, 2df, p.≤.001): Respondents were requested to report their location of residence by indicating the city, town, province, or state in which they lived. Rural residents were asked to indicate the closest town or city. Respondents were divided into three groupings on the basis of their location of residence in relation to the park they were visiting. Respondents living within a 100 mile radius of either Dinosaur or Writing-on-Stone Provincial Parks were included in the first category. (In the case of Writing-on-Stone Park, which is close to the Canada-United States border, United States residents living within the 100 mile radius were also included in this category.) The second category was comprised of Alberta residents living beyond the one hundred mile radius for each park. The final category consisted of visitors from outside the province of Alberta, including residents of other Canadian provinces, the United States, and overseas countries.

Contrasting pictures were found when location of residence was compared for the two parks. Writing-on-Stone Park visitors were more likely to be local residents living within 100 miles of the park (42.4%, as compared to 11.3% of the Dinosaur Park respondents), whereas a greater proportion of Dinosaur Park respondents were from outside the Province of Alberta (47.9%), compared to the proportion of out-of-province visitors to Writing-on-Stone Park (17.5%).

These findings may reflect to some extent the proximity of Dinosaur Park to the Trans-Canada highway, a major transportation route for out-of-province travellers, as well as the increased publicity which the park received as a World Heritage Site during the data collection phase of the study (summer, 1980). Finally, the proportions of Alberta residents living more than 100 miles from the park were comparable for both Dinosaur and Writing-on-Stone Parks (40.9% and 40.2% respectively).

In addition to the socio-demographic variables, the respondents from the two parks were compared on four visitation factors, in order to identify some of the characteristics associated with their park visit. These findings are presented in Table 5.2, and summarized in the following discussion.

Type of Group ($X^2=45.12$, df=4, $p.\leq.001$): Respondents were categorized on the basis of the social group context for their park visit. In response to the question "Which of the following best describes your group?", they were requested to select the most appropriate category from among a range of options. These groups were classified as family, friends, organized group, and single respondents. For the purpose of the discussion, friends and organized group members were included in the same category although they were treated as separate groups in the analysis stage. Family groups predominated for both Dinosaur and Writing-on-Stone Parks, but the proportion of family groups

TABLE 5.2

VISIT CHARACTERISTICS OF DINOSAUR AND WRITING-ON-STONE PARK VISITORS

Variables		Dinosaur Park % of Respondents	Writing-on-Stone Park % of Respondents	Chi-Square
Type of Group	Family	80.6	69.9	45.12, 4df ***
	Friends/Organized Group	11.0	22.3	
	Single Person	2.8	3.3	
	Other	5.7	4.6	
Type of Visit	Day-use	59.8	66.0	8.17, 2df*
	Camping	38.6	31.6	
Visit Frequency	First-time visitor	78.5	51.7	105.63, 1df, ***
	Repeat visitor	21.5	48.3	
Type of Destination	Main Destination	31.4	59.7	108.51, 2df ***
	One of Many Destinations	40.3	23.7	
	Stopover	28.3	16.7	

* Significant at p≤.05 level
** Significant at p≤.001 level

was higher for Dinosaur Park (80.6%), compared to the proportion for Writing-on-Stone Park (69.9%). In contrast, the proportion of respondents who reported that they were with friends or an organized group was greater for Writing-on-Stone Park (22.3%), compared to 11.0% for Dinosaur Park respondents. The proportion of respondents in the single person category was comparable for the two parks (2.8% and 3.3% for Dinosaur and Writing-on-Stone Parks, respectively).

Type of Visit (X^2=8.17, df=2, p.≤.05): Respondents were identified as either day-users or campers on the basis of their response to the question "how long do you intend to stay in the park?" Campers responded by indicating the number of nights that they would be staying, while day visitors reported the number of hours in their daily visit. Although the numbers of day visitors predominated among the respondents for both Dinosaur and Writing-on-Stone Parks, the proportion of day-users was higher for Writing-on-Stone Park (66.0%) compared to the proportion for Dinosaur Park (59.8%). In contrast, the proportion of campers was higher for Dinosaur Park (38.6%) compared to the proportion for Writing-on-Stone Park (31.6%).

Visit Frequency (X^2=105.63, df=1, p.≤.001): Respondents were divided into two categories on the basis of their visit frequency with respect to to the specific park in which they were contacted. They were requested to indicate if they were visiting the park for the first time by reporting "Yes" or

"No", and were categorized as first-time or repeat visitors on the basis of their responses. When responses were compared for the two parks, it was found that a greater proportion of Dinosaur Park respondents were visiting the park for the first time (78.5%), while only 51.7% of Writing-on-Stone Park respondents were in this category. In contrast, only 21.5% of Dinosaur Park respondents were repeat visitors to the park, compared to 48.3% of Writing-on-Stone Park respondents.

Type of Destination ($X^2=108.51$, df=2, $p.\leq.001$): Respondents were requested to identify if the park in which they were contacted was their main destination, one of several destinations, or a stop-over on the way to another area. A higher proportion of Writing-on-Stone Park respondents considered the park to be their main destination (59.7%) in comparison with 31.4% of Dinosaur Park respondents. In contrast, a greater proportion of Dinosaur Park respondents reported that the park was one of many destinations (40.3%) or a stopover on the way to another area (28.3%), compared to 23.7% and 16.7% of Writing-on-Stone Park respondents, respectively.

In the course of this analysis, significant differences were found between Dinosaur and Writing-on-Stone Park respondents for eight of the nine variables assessed. Overall, the Dinosaur Park respondents were more likely to be in the mid-age category, and to have a post-secondary education and higher incomes. A greater percentage of

Dinosaur Park visitors were from out of the province when compared to the proportion for Writing-on-Stone Park. Most respondents were likely to be visiting the park as members of a family group. Most respondents reported that this was their first visit to Dinosaur Park, and considered it to be one of many destinations or a stopover. More day-users than campers were included in the survey population, but the proportion of campers was higher than for Writing-on-Stone Park.

The Writing-on-Stone Park respondents appeared to be proportionately younger, with a greater percentage falling in the lower education and income levels than Dinosaur Park respondents. Although family groups predominated, more of the Writing-on-Stone respondents visited the park as members of a group of friends. In addition, a greater proportion of these visitors were local residents, living within 100 miles of the park. Writing-on-Stone respondents were fairly evenly divided between first-time and repeat visitors, although there was a greater proportion of repeat visitors compared to the proportion visiting Dinosaur Park. The greatest percentage considered the park to be their main destination, and more day users than campers were included in the survey population.

C. The Relationship of Socio-Demographic Factors to Preservation-Recreation Orientation

In the previous section, differences were found on four socio-demographic characteristics when visitors to Dinosaur and Writing-on-Stone Provincial Parks were compared. Each of these factors is examined in this section to determine if it is related to variations in orientation toward park resources. For the purpose of this investigation, the variable groupings developed in Chapter Four are employed; the composite variables for each of the three indicators of preservation-recreation orientation, therefore, constitute the dependent variables, while the socio-demographic factors (age, education, income, and location of residence) are treated as independent variables in this analysis. The data for the two parks are combined in order to obtain a clearer picture of the relationships between the two sets of variables. Each of these socio-demographic factors is investigated to see if variations in these variables are related to identifiable differences in preservation or recreation orientation for the three indicator variables. Results of the analyses are summarized in Tables 5.3 to 5.6.

Of the four socio-demographic factors, the variable "location of residence" appeared to be most consistently related to variations in orientation toward park resources. Results of the six cross-tabulation analyses are presented in Table 5.3. Visitors who lived in closest proximity to the park (within 100 miles) were more likely to indicate a

TABLE 5.3

THE ASSOCIATION OF LOCATION OF RESIDENCE WITH

STRONG PRESERVATION AND RECREATION ORIENTATIONS

	Location of Residence			Chi-Square
	Local % of respondents	Alberta % of respondents	Out-of-Province % of respondents	
Preservation Objectives	63.8	81.4	85.8	30.5, 2df***
Preservation Activities	73.6	86.1	82.4	19.3, 2df***
Preservation Programmes				n.s.
Recreation Objectives	36.2	18.6	14.2	30.5, 2df ***
Recreation Activities	48.4	25.3	12.5	414.8, 2df ***
Recreation Programmes	63.9	45.7	33.4	61.9, 2df ***

* Significant at p≤.05 level
** Significant at p≤.01 level
*** Significant at p≤.001 level
n.s. Not significant at p≤.05 level

recreation orientation in questionnaire responses than respondents living in other locations. Thus, 36.2% of local respondents selected recreational options for management of the park, compared to 18.6% of non-local Alberta residents and 14.2% of out-of-province residents. A greater proportion of local residents (48.4%) indicated that recreational activities were important, compared to 25.3% and 12.5% in the other two categories, respectively. A similar pattern was shown for development and programme preferences, in which 63.9% of local residents selected items of a recreational nature, as compared to 45.7% of the non-local Alberta residents and 33.4% of the out-of-province respondents.

In contrast, a greater percentage of visitors whose location of residence was further from the park (beyond 100 miles) indicated a high level of support for preservation objectives and activities of a preservation nature. Thus, 81.4% of non-local Albertans and 85.8% of out-of-province residents selected preservation objectives as the purpose of the park, as compared to 63.8% of those living within 100 miles of the parks. Similarly, 86.1% of non-local Albertans, and 82.4% of out-of-province residents considered preservation activities to be important, as compared to 73.6% of the local Albertans living within 100 miles of each park.

This pattern replicates that shown by McCool (1976, 1978) and Schinkel (1980) in their comparisons of the

activity preferences of local residents and tourists, and suggests that differences between local and non-local recreation resource users extend to their perceptions of the function of a particular site, as well as their preferences for certain types of development and programme options.

When the age of the respondent was investigated in relation to preservation and recreation orientation, all six of the crosstabulation relationships showed significant variations among the three designated age categories: under 30 years, thirty to forty-nine years, and fifty years and over (Table 5.4). When preservation orientation was examined in relation to age, there was no consistent pattern to indicate that a high level of support was related to any specific age group. However, there were fewer respondents in the older age category (50 years and over) who indicated support for preservation objectives (72.6%), compared to those in the 30 to 49 year age group (81.8%) and the youngest age group (83.9%). In addition, a smaller proportion of the older age group indicated support for preservation programmes (74.8%, compared to those in the lower and middle age categories (82.9% and 85.6% respectively). Furthermore, these respondents were more likely to select recreational objectives for management of the parks. Thus, recreational objectives were selected by 27.3% of respondents over 50 years of age, compared to 16.1% and 18.2% of respondents in the two younger age categories.

TABLE 5.4

THE ASSOCIATION OF AGE WITH

STRONG PRESERVATION AND RECREATION ORIENTATIONS

	Age			
	Under 30 years % of respondents	30-49 years % of respondents	50 years and over % of respondents	Chi-Square
Preservation Objectives	83.9	81.8	72.6	5.9, 2df **
Preservation Activities	77.2	83.6	83.9	7.4, 2df*
Preservation Programmes	82.9	85.6	74.8	15.0, 2df ***
Recreation Objectives	16.1	18.2	27.3	5.9, 2df **
Recreation Activities	34.7	21.2	29.9	20.6, 2df***
Recreation Programmes	57.4	40.5	44.2	25.9, 2df***

* Significant at p≤.05 level
** Significant at p≤.01 level
*** Significant at p≤.001 level

The pattern was mixed for the youngest age group (under 30 years). Although a greater proportion of this group selected preservation objectives (83.9%) as compared to 81.8% and 72.6% of the respondents in the other two age groups, they also indicated a high level of support for recreation activities and programmes of a recreational nature (34.7% of respondents, compared to 21.2% and 29.9% in the two older age categories, for activities; and, 57.7% compared to 40.5% and 44.2% in the 30 to 49 and 50 years and over age categories for recreational programmes). The latter findings are comparable to the results reported by Schinkel (1980) who found that respondents under 30 years of age were more inclined to favour activities in the "active-expressive" activity package.

Variations in educational level of respondents were also analysed in relation to preservation and recreation orientation. Results of the cross-tabulation analyses are presented in Table 5.5. When the proportions of respondents in the three education categories (high school or less, university or college, and trade school training) were compared, education was found to be related to orientation on only two of the six indicator variables. There was no evident relationship between educational level and the indicators of preservation orientation. However, differences were found when respondents in the three educational categories were compared on the recreation activity and recreation development measures. In both cases, a greater

TABLE 5.5

THE ASSOCIATION OF EDUCATION

WITH STRONG PRESERVATION AND RECREATION ORIENTATIONS

	Education			Chi-Square
	High School % of respondents	College % of respondents	Trade School % of respondens	
Preservation Objectives				n.s.
Preservation Activities				n.s.
Preservation Programmes				n.s.
Recreation Objectives				n.s.
Recreation Activities	37.6	18.5	29.7	47.4, 2df***
Recreation Programmes	57.6	38.7	44.8	37.9, 2df***

* Significant at p≤.05 level
** Significant at p≤.01 level
*** Significant at p≤.001 level
n.s. Not significant at p≤.05 level

proportion of respondents reporting educational levels of high school or less indicated strong support for items of a recreational nature. In the case of recreation-oriented activity preferences, 37.6% of the high school respondents felt that these were important as compared to 18.5% of those having college education, and 29.7% of trade school respondents. A greater proportion of respondents in the high school category (57.6%) also indicated the importance of recreation programme options, as compared to 38.7% and 44.8% in the college and trade school educational categories, respectively. This picture is similar to that shown by Hendee *et al.*, (1968) who found that respondents in lower educational categories were more oriented to development of wilderness, rather than its preservation in a natural state.

For income, the final variable in this analysis, respondents were divided into three income categories (low, middle, and high). As with educational level, there were no variations in orientation among respondents in these three income categories when income was cross-tabulated with the three preservation indicators (Table 5.6). Differences were found among the income groups, however, on two recreation indicators. A greater proportion of respondents in the low income category (33.9%) considered recreational activities to be important in these parks, compared with those in the middle income (24.5%) and higher income groups (20.6%). A similar pattern was shown for the recreation programme variable, in which respondents in the low income category

TABLE 5.6

THE ASSOCIATION OF INCOME

WITH STRONG PRESERVATION AND RECREATION ORIENTATIONS

	Income			
	Low % of respondents	Middle % of respondents	High % of respondents	Chi-Square
Preservation Objectives				n.s.
Preservation Activities				n.s.
Preservation Programmes				n.s.
Recreation Objectives				n.s.
Recreation Activities	33.9	24.5	20.6	14.8, 2df***
Recreation Programmes	52.6	43.4	42.2	14.3, 2df***

* Significant at p. .05
** Significant at p≤ .01
*** Significant at p≤ .001
n.s. Not significant at p≤.05 level

were more likely to indicate the importance of recreation options (52.6%), as compared to respondents in the middle (43.4%) and higher income categories (42.2% of respondents).

D. The Relationship of Park Visitation Factors to Preservation-Recreation Orientation

In the first section of this Chapter, differences were also found between Dinosaur and Writing-on-Stone Park visitors on a number of park visitation factors, including the type of social group, the type of visit (day-use/camping), visitation frequency (first-time/repeat visit), and type of destination (main/one of many/stopover). The following discussion presents the results of further analyses in which these four variables are examined to see if they are related to differences in preservation or recreation orientation shown by park visitors (see Tables 5.7 to 5.10).

In the first set of analyses, respondents were classified as members of a family, members of a group of friends, organized group, a single respondent, or "other." For the purposes of the discussion, the variable groupings "friends" and "organized groups" were collapsed into one category and those in the "other" category were eliminated from the analysis. Variations in orientation appeared to be consistently related to the type of social grouping (Table 5.7). Respondents who were members of family groups were more likely to favour preservation objectives (79.9%) and

TABLE 5.7

THE ASSOCIATION OF TYPE OF GROUP WITH

STRONG PRESERVATION AND RECREATION ORIENTATIONS

	Type of Group			
	Family % of respondents	Friends/Organized Grp. % of respondents	Single % of respondents	Chi-Square
Preservation Objectives	79.9	72.2	80.8	11.1, 3df*
Preservation Activities	82.5	76.4	68.6	15.3, 3df**
Preservation Programmes			n.s.	
Recreation Objectives	20.1	27.8	19.2	11.1, 3df*
Recreation Activities	24.5	41.3	20.6	25.9, 3df***
Recreation Programmes	45.0	56.4	23.5	16.9, 3df***

* Significant at p≤.05 level
** Significant at p≤.01 level
*** Significant at p≤.001 level
n.s. Not significant at p≤.05 level

preservation activities (82.5%) when compared to those who were with a group of friends or an organized group (72.2% and 76.4% for objectives and activity preferences, respectively). Single respondents showed a mixed pattern in their preservation responses, favouring preservation objectives, but expressing low support for preservation activities.

A consistent picture was evident when the respondents' social group was examined in relation to recreation orientation. For all three indicators, respondents who visited the parks as a member of a group of friends or an organized group were likely to express a recreational orientation toward park resources and management. A greater proportion of the friends and organized group respondents (27.8%) favoured recreation objectives for management of the two parks, compared to 20.1% and 19.2% for the family and single group respondents respectively. When respondents were compared in terms of their activity preferences, 41.3% of those in the friends/organized group category indicated the importance of activities with a recreational orientation, while only 24.5% of those in a family group and 20.6% of the single respondents considered these activities to be personally important.

A similar pattern was evident when the respondents' social group was examined with respect to preferences for programmes of a recreational nature. A greater proportion of respondents identifying that they were with friends or an

organized group indicated strong support for recreational programs (56.4%), in comparison with either family groups (45.0%) or single visitors (23.5%).

Thus, a fairly clear pattern emerges when variations in orientation toward park resources and management are examined in relation to the social group of the respondent. Consistently, respondents who indicated that they were one of a group of friends or an organized group more frequently expressed stronger support for a recreation orientation and weaker support for preservation objectives and activities when compared with respondents in family groups or single visitors. Although some recent research has been directed toward the role of social group variables as an explanatory factor in accounting for differences in recreation behaviours, the relationships between the social context and variations in orientation toward outdoor recreation environments does not appear to have received notable attention in the outdoor recreation sphere. In view of these findings, further research to define the nature of the relationship may be warranted.

For the remaining variables, ie., type of visit (day-use/camping), visit frequency (first/repeat visit), and type of destination (main/one of many/stopover), there appeared to be some relationships with preservation and recreation orientation, but these were not as consistently evident across all three indicators. The significant findings are reported below, however, since the patterns may

be similar to those reported in previous research or might suggest directions for future research.

For the first variable in this group, type of visit, respondents were identified as either day-users or campers on the basis of their reported length of stay. Of these two groups, campers appeared to be somewhat more preservation-oriented than day-users (Table 5.8). Specifically, when the respondents' type of visit was investigated in relation to activity preferences, a greater proportion of campers (89.3%) expressed a preservation orientation, as compared to 77.2% of the day visitors. Correspondingly, a greater percentage of campers (85.9%) considered programmes of a preservation nature to be important, as compared to the day-use visitors (80.3%). More of the camper group respondents also indicated low support for recreation developments and programmes (56.6%, compared to 52.1% of the day-use respondents).

Relatively few studies have compared day-users and campers in the park context. McCool (1978), however, compared the activity preferences of day-users and campers in a water-based setting, and found that fewer day-users expressed preferences for activities in the "appreciative" category, and were more likely to prefer activities of an "active-expressive" nature, while campers were more likely to express preferences for "appreciative" activities, similar to those incorporated into the preservation groupings of this study.

TABLE 5.8

THE ASSOCIATION OF TYPE OF VISIT

WITH STRONG PRESERVATION AND RECREATION ORIENTATIONS

	Type of Visit		
	Day-Use % of respondents	Camping % of respondents	Chi-Square
Preservation Objectives			n.s.
Preservation Activities	77.2	89.3	28.3, 1df***
Preservation Programmes	80.3	85.9	69.6, 1df***
Recreation Objectives			n.s.
Recreation Activities			n.s.
Recreation Programmes	47.9	43.4	99.1, 1df***

* Significant at p≤.05 level
** Significant at p≤.01 level
*** Significant at p≤.001 level
n.s. Not significant at p≤.05 level

Respondents were also divided into two categories on the basis of their visit frequency to the specific park in which they were contacted. Some respondents reported that they were visiting the park for the first time, while others were repeat visitors. Differences were reported on three of the six indicators, when orientation was investigated in relation to visit frequency (Table 5.9). A greater proportion of first time visitors (84.2%) indicated a strong preservation orientation in their activity preferences, in comparison with repeat visitors to the parks (76.4%). Repeat visitors were more likely to be lower in their support for activities of a preservation nature, and, furthermore, to express strong interest in recreation activities and recreation programme options. Specifically, 39.6% of the repeat visitors indicated a personal preference for recreation activities in the park context, in comparison with 20.2% of the first-time visitors. A greater proportion of the repeat visitors (52.5%) also considered recreation programme options to be important in contrast to 42.7% of the first-time visitors.

Previous research does not appear to have directly addressed the issue of differences in orientation toward park or outdoor recreation resources between first-time and repeat visitors, although other differences between these two user-groups have recently been identified (eg., Hammitt, 1981). The pattern of responses found on this variable may be closely related to that evident for the location of

TABLE 5.9

THE ASSOCIATION OF VISIT FREQUENCY WITH

STRONG PRESERVATION AND RECREATION ORIENTATIONS

	First-time Visitors % of respondents	Repeat Visitors % of respondents	Chi-Square
Preservation Objectives			n.s.
Preservation Activities	84.2	76.4	11.4, 1df***
Preservation Programmes			n.s.
Recreation Objectives			n.s.
Recreation Activities	20.2	39.6	47.1, 1df***
Recreation Programmes	42.7	52.5	10.5, 1df**

*Significant at p≤.05 level
** Significant at p≤.01 level
*** Significant at p≤.001 level
n.s. Not significant at p≤.05 level

resident variable, but further elaboration to investigate this issue is beyond the scope of this study.

In a practical planning sense, the "type of destination" variable is a useful parameter for consideration. In this study, respondents were asked to identify if the park where they were contacted represented their main destination, one of several destinations, or a stopover on the way to another area. The responses of respondents in each of these categories were then investigated to see if variations in orientation were related to the nature of their visit. Between-group differences were evident on two of the six composite variables (Table 5.10). No differences were found in degree of preservation orientation among the three respondent groups. On the two significant variables, respondents who reported that the specific park was their main destination were more likely to demonstrate a strong recreation orientation. Thus, a greater proportion of respondents in the "main destination" category (37.3%) indicated their preference for recreational activities, as compared to 18.5% in each of the remaining two categories. Similarly, 53.9% of respondents reporting the park as their main destination considered recreational programmes to be important, as compared to 39.6% of those who considered the park to be "one of many destinations", or 41.6% who reported their visit to be a stopover on the way to another area.

TABLE 5.10

THE ASSOCIATION OF TYPE OF DESTINATION

WITH STRONG PRESERVATION AND RECREATION ORIENTATIONS

	Main Destination % of respondents	Stopover % of respondents	One of Many Destinations % of respondents	
Preservation Objectives				n.s.
Preservation Activities				n.s.
Preservation Programmes				n.s.
Recreation Objectives				n.s.
Recreation Activities	37.3	18.8	18.5	50.2, 2df***
Recreation Programmes	53.9	39.6	41.6	22.6, 3df***

*Significant at p≤ .05 level
**Significant at p≤ .01 level
***Significant at p≤ .001 level
n.s. Not significant at p≤.05 level

As with the visitation frequency variable reported above, it is intuitively possible that this pattern of response may be associated in some manner with the location of residence variable. As above, further elaboration of this relationship is beyond the scope of this analysis.

E. Visitor Profiles Associated with Preservation and Recreation Orientations

In this Chapter, the variations in preservation and recreation orientations which were reported in Chapter Four were further investigated to determine if they could be explained by definable differences in the characteristics of the park visitors. The specific objective was to determine if strong support for preservation or recreation objectives, activities, or programmes was expressed by particular sub-groups of Dinosaur and Writing-on-Stone Park visitors.

The independent variables which were examined in relation to preservation and recreation orientation were of two types, socio-demographic and visitation factors. Socio-demographic variables included location of residence, age, education, and income, while visitation factors consisted of social group context, type of visit, visit frequency and type of destination.

On the basis of this analysis, a strong preservation orientation was found to be associated with several identifiable characteristics of the respondent. Specifically, respondents who lived more than 100 miles away

from the park where they were contacted, respondents who were campers, and those who were visiting the park for the first time, were more likely to express a stronger preservation concern in their responses.

In contrast, a weaker preservation orientation was shown by other sub-groups in the survey population. Respondents who lived in close proximity to the park in which they were contacted (within 100 miles), respondents who were over fifty years of age, and those who visited the park in an organized group or a party of friends were more likely to show this picture. Repeat visitors to the park also expressed a weaker preservation orientation.

As might be expected, many of the respondent characteristics associated with a weak preservation orientation were similarily related to a strong recreation orientation. Thus, a greater proportion of respondents who lived within 100 miles of the park, those under thirty years of age and respondents visiting the park in an organized group or group of friends were more recreation oriented than respondents falling into other categories of these variables. Although the pattern was not as strong as for the variables reported above, it was also noted that repeat visitors, those in the lower income and educational categories, and respondents indicating the park to be their main destination were more likely than other groups to express a recreation orientation on one or more of the indicator variables.

The respondents who most consistently indicated a weak recreation orientation were those identified on the basis of the location-of-residence factor as out-of-province visitors. Other socio-demographic factors associated with a weak recreation orientation were age, in the middle (30 to 49 year) age category, and an educational level of university or college. This weak orientation was also shown by those visiting the park for the first time, those who indicated that the park was a stopover or one of several destinations, and respondents who were visiting the park on their own (ie., respondents in the single category).

This overview has provided profiles of those respondents who expressed various orientations toward specific parks with unique resources, including a strong preservation orientation, strong recreation orientation, weak preservation orientation and weak recreation orientation. In the following section, these findings will be discussed in relation to the differences in survey population compositions for Dinosaur and Writing-on-Stone Park visitors, and the overall differences in visitor orientation toward these two parks that were identified in Chapter Four.

F. Differences in Visitor Orientation Toward Dinosaur and Writing-on-Stone Parks: The Role of Socio-Demographic and Visit Factors

Significant differences have been identified between Dinosaur and Writing-on-Stone Provincial Parks on two categories of variables. In the first set of analyses, visitors' views about the parks as preservation or recreation resources were compared. Dinosaur Park visitors were found to be somewhat more preservation-oriented on the basis of activity preference differences between the two parks, although few significant differences were evident on the remaining indicator variables (perceptions and management preferences). However, as indicated on the three measures, visitors to Writing-on-Stone Park appeared to place more importance on the role of recreation in the park than did visitors to Dinosaur Park. In addition, analysis of the second category of variables, socio-demographic and visit profile descriptors, reveals many differences in the characteristics of the respondents for the two parks. In view of the findings that definable socio-demographic and visit characteristics are related to preservation and recreation orientations, it remains to determine which of the socio-demographic and visit factors are operating in this context to generate overall orientation differences between the two parks.

The four respondent characteristics relating to high preservation orientation are identified in Table 5.11. For

TABLE 5.11

RESPONDENT CHARACTERISTICS RELATED TO STRONG PRESERVATION ORIENTATION:

SURVEY POPULATION PROPORTIONS FOR DINOSAUR AND WRITING-ON-STONE PARKS

Socio-Demographic/Visit Factor	Dinosaur Park % of respondents	Writing-on-Stone % of respondents	Chi-Square
Location of residence (more than 100 miles/out-of-province)	88.8	57.7	212.6, 2df****
Campers	38.6	31.6	8.2, 2df*
First-time Visitors	78.5	51.7	105.63, 1df***
Member of a family group	80.6	69.9	45.1, 4df***

* Significant at p≤.05
*** Significant at p≤.001

each of these factors, the proportions of Dinosaur Park visitors falling into these categories are significantly higher than for Writing-on-Stone Park. The stronger orientation toward preservation activities shown by Dinosaur Park visitors thus appears to reflect, at least in part, the combined effects of selected park visitor characteristics, including the higher proportion of family groups, non-local visitors, campers, and first-time visitors.

The respondent characteristics related to a strong recreation orientation are summarized in Table 5.12. For all eight of these factors, the proportions of Writing-on-Stone Park respondents falling into these categories is significantly higher than for Dinosaur Park. The stronger recreation orientation demonstrated by Writing-on-Stone Park respondents can thus be attributed , at least in part, to the higher proportions of visitors who were under 30 years of age, with lower education and income levels, day users, repeat visitors, those visiting the park in organized or friendship groups, local residents, and those who identified Writing-on-Stone Park as their main destination.

G. Summary and Conclusions

The analyses presented in this Chapter have been directed toward objectives three and four of the study. One of these objectives was to examine the relationship of selected socio-demographic and visit characteristics of park visitors to variations in preservation and recreation

TABLE 5.12

RESPONDENT CHARACTERISTICS RELATED TO STRONG RECREATION ORIENTATION:

SURVEY POPULATION PROPORTIONS FOR DINOSAUR AND WRITING-ON-STONE PARKS

Socio-Demographic/Visit Factor	Dinosaur Park % of respondents	Writing-on-Stone Park % of respondents	Chi-Square
Age (under 30 years)	24.4	33.4	16.7, 2df***
Education (high school or less)	35.9	42.5	8.1, 3df*
Location of Residence (local residents)	11.3	42.4	213.6, 2df***
Income (low income level)	26.7	37.1	18.5, 4df***
Type of group (friends/organized group)	11.0	22.3	45.1, 4df***
Type of visit (day-users)	59.8	66.0	8.2, 2df*
Visit frequency (repeat visitors)	21.5	48.3	105.6, 1df***
Type of destination (main destination)	31.4	59.7	108.5, 2df***

* Significant at p≤.05 level
** Significant at p≤.01 level
*** Significant at p≤.001 level

orientations with respect to park resources. This objective was developed on the basis of previous research findings which provided evidence of the association of socio-demographic and visit characteristics to each of the three indicator variables: objectives; activity preferences; and, preferences for management. Three propositions were developed, expressing the general relationship of socio-demographic and visit factors to each of these variables.

The results of the analyses indicated that socio-demographic and visit factors were related to each of the three indicator variables. The strongest support was evident for the activity preference variable, since twelve of the possible sixteen relationships were significant. Support was also given to the proposition that variations in preservation and recreation management preferences were related to socio-demographic/visit characteristics, since ten of the sixteen relationships investigated were significant. Support for the remaining proposition, linking socio-demographic/visit characteristics and perceptions of the park purpose, was weaker in this study, although differences did occur on six variable combinations. Thus, support was evident for the three propositions related to objective three; the evidence was strongest for the activity preference and management preference variables, and weakest for perceptions of park purpose, when the relationships of socio-demographic/visit characteristics and

preservation-recreation orientations were assessed.

The specific findings related to each of the socio-demographic/visit variables were discussed in detail and summarized into profiles of park visitors associated with strong and weak preservation and recreation orientations. Variations in perceptions were found to be related to location of residence, age, and type of group. Previous research (Bryan and Jansson, 1973; Markle, 1975) had found a relationship of perceptions with location of residence, but the relationship of age and type of social group to perceptions of park purpose had not been reported previously in the literature reviewed.

Variations in activity preference orientations were found to be associated with location of residence, age, education, income, type of group, type of visit, visit frequency, and type of destination. The findings related to location of residence correspond closely to previous reports by McCool (1976, 1978), and Schinkel (1980). In the present study, non-local visitors were found to have a stronger preservation orientation, while a greater proportion of local visitors favoured activities of a recreational nature. The review of literature also determined that age was related to activity preferences but a consistent picture was not evident (Hendee *et al.*, 1971; Schinkel, 1980). Results obtained in this study are most consistent with the findings of Schinkel (1980), since respondents in the older age categories were found to be most oriented to activities in

the preservation category, and younger respondents (under the age of 29 years) were more likely to express a preference for recreational activities.

Hendee *et al.*, (1971) also reported activity preference variations with educational level of the respondent. The findings of this study relating lower education levels to preferences for active and social recreation activities supports Hendee *et al.*'s (1971) results, which associated lower education levels to active-expressive and passive free-play activities. The fourth socio-demographic variable investigated in the present study was income. Lower income levels were also found to be associated with preferences for recreational activities.

Park visit characteristics have received relatively little attention in previous research with regard to variations in activity preferences. A relationship between activity preferences and type of social group was previously identified by Field and O'Leary (1974) and Buchanan *et al.* (1981). Results presented in this chapter support these findings, and have related family groups to preferences for preservational activities, and groups of friends or organized groups to preferences for recreational activities. Differences in orientation between day-users and campers had been reported previously by McCool (1978) and the findings that campers were more likely to express preservation activity preferences corresponds closely with his results. Finally, differences were found for the two remaining

variables, visit frequency and type of destination. First-time visitors were more likely to prefer preservation activities, while repeat visitors and those considering the park to be their main destination were more recreationally oriented.

Variations in preferences for management according to socio-demographic and visit characteristics were also proposed. All eight of the socio-demographic and visit characteristics were found to be related to management preferences. Preferences for preservation programmes were related to younger and middle age groups, and campers. Preferences for recreation programmes were related to local residents, younger age groups, lower education and income levels, groups of friends, day-users, repeat visitors, and those who considered the parks to be their main destinations. Most of these factors do not appear to have been examined previously in relation to preservation-recreation orientations. However, the association of local residence to recreation management preferences corresponds closely to the findings of Roggenbuck and Kushman (1980), while the relationship of lower educational levels to recreation preferences supports the previously reported results of Hendee *et al.* (1968).

Analyses directed toward the third objective demonstrated that variations in preservation and recreation orientations were associated with socio-demographic and visit characteristics of park visitors. This information

formed a basis for further analyses related to the fourth objective of the study. This objective was to examine similarities and differences in the overall orientation of visitors in the light of the preservation and recreation views of specific sub-populations of users and the constitutent visitor profiles for each park. In this chapter, the survey population profiles for each park were identified, and comparisons were made between the profiles for Dinosaur and Writing-on-Stone Park visitors. Significant differences in population proportions were found for four of the socio-demographic variables: age, education, income, and, location of residence, and for all four of the selected visit factors: type of group, type of visit, visit frequency; and type of destination.

When population sub-group orientation differences and profile structures were related to the preservation orientation differences shown by Dinosaur and Writing-on-Stone Park visitors, it was concluded that this picture was, in part, attributable to the higher proportions of strong preservation profile visitors at Dinosaur Park. The stronger recreation orientation of Writing-on-Stone Park visitors was similarly found to be related to the higher proportions of visitors associated with the strong recreation orientation profile.

The analyses presented in this chapter have been undertaken in order to provide an understanding of the overall variations in preservation and recreation

orientations shown by Dinosaur and Writing-on-Stone Park visitors, which were reported in Chapter Four. Although the identification of visitor orientations provides useful information in assessing the public's views and potential responses to planning strategies, a clarification of the reasons or explanatory factors associated with these orientations, provides planners with a more refined data base for future decisions. Since the survey distribution procedure was randomized, it is assumed that the profiles developed for the two parks are representative of the actual park visitor population structure during the summer season. Variations in views about these two parks and associated behaviours may be related in part to geographical and resource differences evident for Dinosaur and Writing-on-Stone Parks, but results presented in this study indicate that a significant factor in accounting for these variations is the different user clientele currently attracted to the two sites. The implications of these findings from both a practical and theoretical perspective are developed in the final chapter.

VI. CONCLUSIONS AND IMPLICATIONS

A. Introduction

The presentation in this chapter provides an overview of the study, including a restatement of the study objectives and propositions, a brief description of the methodology employed in addressing these objectives and a summary of the study results. This is followed by a discussion of the theoretical and practical implications of the study, with suggestions for future research.

B. Review of the Study

The overall goal of the study was to investigate the nature of visitors' preservation and recreation orientations with respect to two parks having both heritage and recreational values. Three factors were employed as measures to assess these park orientations, including perceptions of park purpose/objectives, activity preferences, and preferences for management programmes, since preservation and recreation-related distinctions had been determined for each of these variables in previous studies.

The following objectives constituted the direction for the study:

1. To determine the overall preservation and recreation orientations of visitors to Dinosaur and Writing-on-Stone Provincial Parks;

2. To compare the overall preservation-recreation orientations of visitors to each of the two parks;
3. To examine the relationship of selected socio-demographic and visit characteristics of park visitors to variations in preservation and recreation orientations.

   Three propositions were developed relating to this objective, indicating that preservation and recreation variations in: a) perceptions of park purpose/management objectives; b) activity preferences; and c) management preferences, would be related to the socio-demographic and visit characteristics of park visitors.
4. To examine similarities and differences in the orientations of visitors to the two study parks in the light of the preservation and recreation views of identifiable sub-populations of users and the constitutent visitor profiles for each park; and
5. To examine the relationships among the three indicator variables employed in the study.

In order to meet the data needs associated with these objectives, a survey was conducted in the two study parks, with self-administered questionnaires distributed on a random basis to visitors entering the parks. Coded survey responses were computerized and processed using frequency, cross-tabulation, and correlational analyses. The results of these analyses were reported in Chapters Four and Five and are summarized below:

1. When the overall orientations of park visitors were assessed on three indicator variables (perceptions, activity preferences, and management preferences), it was determined that a greater proportion of Dinosaur and Writing-on-Stone Park visitors expressed a preservation orientation, while smaller proportions expressed a recreation orientation with respect to the two parks, (Objective One);
2. When responses were compared for the two parks, through both individual item and composite variable analyses, it was found that Dinosaur Park visitors were more likely than Writing-on-Stone Park visitors to express a preservation orientation in their activity preferences. In contrast, Writing-on-Stone Park visitors were more likely than Dinosaur Park visitors to express a recreation orientation in their activity preferences and preferences for management. (Objective Two)
3. Correlation analyses were employed to assess the degree of association between three composite variable pairs: activity preferences and management preferences; activity preferences and perceptions; perceptions of park purpose and management preferences. Correlations were found to be in the moderate to low range. The strongest degree of association occurred between the activity preference and development preference variables, with a slightly weaker association evident for the activity preference and perceptions variables.

Correlations were low for the variable pair, perceptions and development preferences (Objective Five).

4. Socio-demographic and visit factors were found to be related to each of the three indicator variables. Variations in activity preference orientations were found to be related to socio-demographic and visit factors, with twelve of the possible sixteen relationships significant. A similar picture was shown for recreation management preferences, in which all eight of these factors accounted for variations in preservation and recreation orientations, Support was weaker for the relationship of socio-demographic/visit factors to perception of the park purpose (Objective Three);
5. Variations in perceptions of park purpose were found to be related to location of residence, age, and type of group (Objective Three (a));
6. Variations in activity preference and management preference orientations were found to be associated with location of residence, age, education, income, type of group, type of visit, visit frequency, and type of destination (Objective Three (b));
7. When the respondent profiles were compared for the two study parks, Dinosaur and Writing-on-Stone, significant differences were found for four of the five socio-demographic variables and four park visit factors (Objective Four); and

8. Overall, differences in orientation between Dinosaur and Writing-on-Stone Park visitors were found to be attributable, in part, to the higher proportions of strong preservation profile visitors at Dinosaur Park, and the higher proportions of strong recreation profile visitors at Writing-on-Stone Park (Objective Four).

Due to the nature of the investigation, this study did not comply with a hypothesis-testing format. Objectives One, Two, and Four were descriptive in nature, with no *a priori* information by which to generate propositions. The relationships proposed in Objective Three, associating socio-demographic and visit factors with preservation and recreation orientations, were based on a review of previous literature. The results reported in this study supported the findings of previous studies (eg., Bryan and Jansson, 1973; Hendee *et al.*, 1968; Hendee *et al.*, 1971; McCool, 1978; Roggenbuck and Kushman, 1980; Schinkel, 1980), and extend these findings to include the relationships of age and type of social group to perceptions; visit frequency and type of destination to activity preferences; and, age, income, and park visit characteristics to preferences for management, as factors associated with preservation and recreation orientations. Finally, variations in the strength of correlations between variable pairs corresponds with the picture developed from previous research findings where the relationship of activity preferences to management/development preferences received the most

consistent support, and the relationship of perceptions to management preferences received little support.

In the following sections, the practical and theoretical implications of these findings are outlined.

C. Limitations of the Study

The study results presented in the previous section, and the implications addressed in the following sections should be viewed in the context of several study limitations. These limitations are outlined below.

The first limitation represents a general research concern associated with the stability of the study findings over time. It should be emphasized that the overall orientations of park visitors reflect a particular situation at a particular point in time, and it is possible that this picture might change temporally in response to changing situational and park visitor factors. Repeating the study would be the most effective way of monitoring these changes, and providing a current picture of visitors' views. This concern is not, however, as relevant for the investigations of variations in orientation with socio-demographic and park visit characteristics, since comparability of the results with previously reported findings provides an external validity measure suggesting spatial and temporal consistencies in the identified patterns.

The second limitation is associated with the more specific methodology of the project. In this study, park

visitor orientations were assessed along a dimension which was labelled "Preservation - Recreation". Although this was perceived by the researcher as a continuum of views and behaviours, the questionnaire items and subsequent analyses were treated in a dichotomous format, with preservation and recreation labels. This presented a fairly simplistic, polarized view of variations in perceptions, activity preferences, and management preferences which was considered manageable for an initial investigation of this nature. It is acknowledged, however, that this issue is very complex, and that any particular item employed in the questionnaire might be viewed as having components of both preservation and recreation, or as having many dimensions reflecting various aspects of visitor experiences.

The third limitation is concerned with the representativeness of the survey population and the issue of non-responses. The return rate for completed questionnaires was 70.7% of those sampled at Writing-on-Stone Park, and 55.0% at Dinosaur Park. Thus, a considerable proportion of those receiving the questionnaire failed to return it, a situation which was particularly evident in the case of Dinosaur Park. It is known from previous survey studies that non-respondents differ from respondents, and that this could contribute to a non-respondent bias in the results. There was no technique incorporated into the study by which these non-respondents could be identified and characterized. However, from previous studies, it has been determined that

respondents often have a stronger interest or involvement in the particular topic of the survey, or might be more likely than non-respondents to consider that their input would have some impact on future decisions. It is thus possible that, in the present study, those park visitors who were most interested or concerned about the parks would be most likely to respond to the survey. Although it is possible that preservation concerns would be over-represented as a result, there is also a possibility that recreation concerns could be similarly misrepresented.

The possibility of non-response bias may also arise from another source. The survey population was derived on the basis of a multi-stage sampling technique; a survey was distributed to a visitor party, which in turn selected one member of the party to respond to the survey. It is possible that the characteristics and views of the respondent do not accurately reflect the characteristics and views of the remaining members of the party. In view of these two types of potential non-response bias, the results of the survey should be seen to reflect the specific responses of those who answered the survey, and not necessarily the views of remaining party members or visitors who failed to answer the questionnaire.

The final limitation relates to the comparability of the two parks as research settings. It was found that the overall orientations of park visitors differed for visitors to Dinosaur and Writing-on-Stone Parks, and that differences

were evident in the profiles of visitors to the two sites. It was concluded that these variations in overall orientation were in part, a reflection of the different proportions of strong preservation and recreation-oriented respondents in each park. A further explanation could be proposed which relates variations in park visitor profiles and overall orientation to differences in the situational attributes of the two parks. As indicated in the description of the study methodology (Chapter Three), Writing-on-Stone Park tends to serve as an important regional recreational resource since there are no alternative public recreation sites of similar quality in the region. This is less true for Dinosaur Provincial Park, since nearby Kinbrook Island Provincial Park provides water-based recreational opportunities for local residents. It is likely that these differences in situational context, reflecting the presence or absence of alternative recreation opportunities plays an instrumental role in attracting particular park visitors, and hence in shaping the visitor profiles and the subsequent park orientations reported in this study.

D. Practical Implications and Recommendations

One objective of the study was to provide park planners with an understanding of the preservation and recreation orientations of visitors to two Provincial Parks, Dinosaur and Writing-on-Stone. Since both parks were undergoing master plan development at the time that this research

project was being conducted, the survey results were useful in providing planners with an indication of the relative degree of public support which could be anticipated for alternative types of park concepts. In addition, specific aspects of the results, such as socio-demographic and park visit data, proved to be particularly valuable, since the survey results were able to provide the only available information about visitor characteristics for the two parks. Therefore, in addition to presenting qualitative information about the orientation of park users, these data were also able to provide quantitative information on which to base demand analyses and projections on both a park-specific and regional system basis.

The survey results have suggested that the preservation-recreation dimension is a conceptualization which is managerially relevant for understanding behavioural differences among subgroups of park visitor populations. This dimension also gains value since it corresponds closely to the types of preservation-recreation distinctions which occur frequently in park planning and resource management. The results indicate the complexity of the preservation-recreation issue from both the behavioural and the planning standpoint. It may be that at every site there are some visitors who have a preservation orientation and some who express a recreation orientation, and planners must face decisions whether to accommodate this diversity, or to take a clear stance favouring one orientation or the other.

Such a dilemma points out the need for a systematic approach to planning for preservation and recreation concerns within an outdoor recreation system, so that the diverse needs of user groups are accommodated.

In the particular case of Dinosaur and Writing-on-Stone Provincial Parks, the results suggested that the greatest proportion of park visitors would endorse a planning approach favouring the protection and interpretation of park resources. However, a substantial proportion of the visitors indicated support for strategies of a recreational nature, a situation which was particularly evident in the case of Writing-on-Stone Park. Three types of planning approaches appear to be possible to resolve the dilemma: 1) a strategy in which equal balance is given to preservation and recreation, 2) a weighted strategy favouring preservation programmes over recreation programmes and, 3) strategies which concentrate on preservation, while phasing out opportunities of an active and social recreational nature.

The study results would appear to favour the type of weighted strategy suggested by 2) above, since it addresses the diversity of needs expressed by the various groups, but recognizes the over-riding importance of preservation of park resources. In the case of Writing-on-Stone Provincial Park, the results suggested that the weighting given to recreation considerations should be greater than the weighting given to recreation at Dinosaur Park. In both cases, however, decisions must be made to accomodate

recreational activities on-site (ie. within the existing park boundaries) or to divert some funding toward the development of alternative sites which will provide some of the opportunities currently available in the parks, such as river access, picnicking, and active recreation. In particular, the views of local residents need to be acknowledged (Cooke, 1982; O'Leary, 1976) in order to avoid disruption to their lifestyles, and to minimize non-resident conflicts arising from the encroachment of visitor facilities and increased tourism on their traditional leisure places.

The comparison of findings for Dinosaur and Writing-on-Stone Parks provides a frame of reference for planners, who benefit from the opportunity to compare relevant information about one park with other park contexts. However, since this study was limited to two parks, which were fairly similar in resource and recreation features, this frame of reference is relatively narrow. Additional perspectives about the preservation-recreation dimension and its relevance for the Alberta Provincial Park system as a whole could be gained by extending this type of study to other park settings. In particular, this should include sites which have a more obvious recreation focus, such as the provision of water-based, or dispersed back country opportunities.

As well as allowing planners to examine visitors' preservation-recreation orientations toward a broad range of

park types, such a strategy would serve several additional functions. First, the issue of rank-ordering of activity and management preferences, noted in Chapter Four, could be addressed. In the overview of results it was noted that the relative ranking of some activity and management items was comparable for the two parks. It was beyond the scope of the present study to assess whether this reflected visitors' responses with regard to two similar park environments, or alternatively, represented a consistent ranking of activity and management preferences across all outdoor recreation settings. Extension of the present study format to various types of settings would provide the necessary data to determine which of these two explanations is most valid in the Alberta Provincial Park context.

Secondly, if further studies included an examination of the relationship of socio-demographic and park visit characteristics to preservation-recreation orientations, this approach would provide further confirmation of the consistency of these findings across various types of park settings. Comparisons with previously reported findings, such as those of McCool (1976, 1978), Roggenbuck and Kushman (1981) and Schinkel (1980), obtained in three types of state parks as well as northern campground, and wild river contexts, suggest that certain relationships reported in the present study are generalizable across widely divergent settings. It would be anticipated, therefore, that similar variations in preservation-recreation orientations would be

demonstrated for specific user-groups, across a range of Alberta Provincial Park settings.

If this pattern were confirmed, information gathering in settings where the preservation-recreation issue would be of particular concern could be simplified to focus on socio-demographic and park visit characteristics, as long as the data collection instrument contained the key descriptors (such as location of residence, age, and type of social group) which have been shown in the present study to have significant associations with preservation and recreation orientations. Determination of the visitor profile, for the site, would then allow extrapolations on the basis of the previously reported associations, thus providing a general indication to planners of the relative support for preservation and recreation-related park concepts in situations where the expense of conducting a full-scale, detailed survey might be prohibitive.

However, in general, the need to conduct survey research in order to provide basic information for each development plan undertaken by Alberta Recreation and Parks, should be stressed. The findings of the present study clearly indicate that, although two parks may appear to be similar in form and function, they may in fact elicit somewhat different reactions and expressed preferences from their clienteles, and that these variations are, in part, a reflection of the differences in composition of the park visitor populations. Survey research results may assist

planners in understanding this diversity of views so that their decisions may better address the particular needs of users of specific parks.

The study results also provide visitor services personnel with an indication of user-groups who may be potential targets for specific management messages. Butler (1980) has demonstrated that interpretive programme messages may be instrumental in encouraging visitors to protect park resources. If management wishes to enhance visitors' concerns about resource protection, a concerted effort needs to be made to reach park visitors who are least likely to be preservation-oriented. The results suggest that local residents and members of friendship or organized groups would likely be the most obvious target groups for this type of message. Since it is possible that these visitors are not contacted through the traditional interpretive channels, innovative messages and techniques need to be devised and promoted to ensure that such contact is made.

Furthermore, survey research also provides the basis for development of promotional marketing strategies (Crompton, 1981). For example, the results of the present study provide information which might be used to develop marketing themes, and, on the basis of the park visitor analysis, to suggest potential user-groups toward whom specific marketing messages might be addressed. This approach, however, assumes that management has a clear idea about the intent and functions of the specific parks, as

well as an understanding of the role of these parks in the Provincial Park system. If the preservation role of Dinosaur and Writing-on-Stone Parks is favoured by planners, potential visitors most likely to be appreciative of this strategy could be attracted to the parks through promotional marketing techniques. As indicated by the study results, these would include non-local residents, and family groups, in particular.

One potential limitation of the study occurs as a consequence of the seasonal time frame in which the project was conducted. Data collection was carried out in the two study parks during the peak summer season of July and August. The park patronage statistics (Alberta Recreation and Parks, 1981), indicates that July and August (1980) visitors represented approximately 56% and 43% of yearly visitation for Dinosaur and Writing-on-Stone Parks, respectively. It is possible that the visitor profiles documented in the present study might not accurately reflect user-group characteristics in the shoulder and off-seasons. However, by defining the views and behaviours of specific sub-groups of park visitors, the present study has provided a basis for predicting how overall orientations might differ if variations in user-group profiles were documented according to season. For example, if local residents were more strongly represented in the off-season, it could be predicted from the study results that greater support for recreational programmes would be evident when overall park

orientations were determined. In the final analysis, however, decisions would have to be made about which groups to accommodate when park concepts are being developed and selected; and the study results alert planners to the variations in orientations which are associated with these various user-groups, regardless of season.

E. Theoretical Discussion and Implications

In addition to providing information of a practical nature concerning visitors orientations toward two specific parks in the Alberta Provincial Park system, the findings of this study have a broader relevance with respect to current issues addressed in the outdoor recreation literature. A consistent and prevalent theme arising from the behavioural approach to outdoor recreation research is that recreationists are not a homogeneous group, and that this heterogeneity is reflected in the diversity of psychological responses, behaviours, views, and preferences of definable population subgroups. In identifying variations in perceptions, activity preferences, and management preferences among sub-groups of park visitors, this study has further substantiated these conclusions of demonstrable differences among recreation resource users. Furthermore, by extending the investigation to include park visit as well as socio-demographic factors as a basis for distinguishing various user-groups, the study has provided support for the inclusion of these factors as explanatory variables

contributing to variations in recreation behaviours. The present study was limited to the investigation of four park visit factors; on the basis of the present findings, and the results of previously reported research incorporating site visit factors (Hammitt, 1981; McCool, 1978; Schinkel, 1980; Vaske *et al.*, 1980), it would appear that further investigation of these factors would be warranted to determine if similar patterns of relationships are observable across different types of sites.

In particular, these findings contribute to an understanding of user-group differences with respect to a preservation-recreation dimension, by relating variations in preservation-recreation orientations to socio-demographic and park visit characteristics. The preservation-recreation dimension consistitutes one spectrum along which visitors' views and behaviours may vary and, as such, is relevant to the type of multi-dimensional approach to park planning and management outlined by Clark and Stankey (1979). Although the specific labels of the preservation-recreation dimension have been employed infrequently in behavioural aspects of outdoor recreation research (Merriam *et al.*, 1972; Markle, 1975; White and Schreyer, 1981), the findings of this study relate to conceptually similar distinctions which have been employed in previous analyses of recreationists' views and behaviours. Support for this contention comes from the correspondence of certain aspects of the findings (specifically those related to activity preferences) with

previously reported findings using the Hendee, Gale, and Catton (1971) typology (McCool, 1976, 1978; Schinkel, 1980), and a socio-environmental continuum (Schinkel, 1980).

The findings suggest that the preservation-recreation dimension is relevant to the understanding of visitors' preferences with regard to management programmes and developments as well as to activity preferences. Previous studies which have attempted to conceptualize visitors' management preferences along definable dimensions appear to be limited to the literature (Hendee *et al.*, 1968; Sadler, 1970; Smith and Alderdice, 1979). It would appear from the results of the present study, that this approach would have merit, and would provide a more meaningful and productive technique than investigations limited to views about discrete, site-specific programmes.

In the investigation of preservation-recreation orientations, socio-demographic and visit factors were investigated in relation to the three indicator variables: perceptions, activity preferences and management preferences. When perceptions of park purpose were examined to determine if variations in preservation and recreation orientation could be related to socio-demographic and park visit factors, few relationships were found to be significant. In addition, the previously supported relationship of education with preservation orientation (Hendee *et al.*, 1968; Markle, 1975) was not supported in the present study.

The strongest evidence for the existence of the association of socio-demographic variables and perceptions comes from research in the wilderness context such as that of Hendee *et al.*, (1968). However, limitations to the use of perceptions in the park context have been identified previously by Schreyer and Roggenbuck (1981) who suggested that images of park systems were too generalized to be managerially useful, and consequently, recommended the study of perceptions in more specific park contexts. However, when visitors' perceptions were assessed in relation to specific park environments in the present study, the relationship of socio-demographic and visit factors to variations in perceptions was again found to be weak and inconsistent.

The relatively weak evidence obtained in this study combined with limited results from previous studies suggests that the perception variable may be inadequately conceptualized, or alternatively, may have questionable merit when employed in the investigation of park images. Future studies should attempt to address this issue by initially refining the concept of perception of park purpose. This might be accomplished by employing an expanded measurement scale which would include several dimensions in addition to the preservation-recreation dimension assessed in the present study. Such an approach might provide a clearer understanding of perceptions of park purpose and might provide a more fruitful basis for assessing the relationship of socio-demographic and park visit factors to

this variable.

In contrast to this picture, previous research has provided considerable indication that variations in activity preferences are related to socio-demographic and site visit factors (Hendee *et al.* 1971; McCool, 1976, 1978; Romsa, 1971; Schinkel, 1980). The results of the study provide support for these findings, and further suggest that the preservation-recreation conceptualization constitutes a meaningful dimension for the assessment of activity preferences. Of the three indicator variables employed in the study, variations in the activity preference factor appeared to be most strongly and consistently related to socio-demographic and site visit characteristics. The relevance of studying park visit factors in relation to activity preferences was supported by the findings, suggesting that future studies could be meaningfully directed toward an investigation of the role of additional site visit factors. Comparison of the present results with previous findings of McCool (1976) and Schinkel (1980) suggests that similar types of relationships may generalize across different types of sites, and this contention also merits further investigation.

The review of relevant literature revealed few studies which had investigated the relationship of socio-demographic and site visit variables to preservation-recreation development views. However, Jackson (1980) has noted the association between specific user-groups on the one hand,

and views on appropriate uses and strategies on the other. This contention did receive considerable support since each of the socio-demographic and park visit variables employed in the present study was found to be related in some degree to preferences for management programmes. Since this approach may have merit in contributing to a behaviourally-based conceptualization of latent-demand, further investigations of explanatory factors related to preferences for programmes and developments would appear to be a valuable research direction. The conceptualization of development dimensions, such as the preservation-recreation dimension employed in the present study would provide a more productive basis than the investigation of views about discrete programmes. Furthermore, such investigations could meaningfully be extended to include an expanded range of socio-demographic and visit factors, so that a more complete picture of variable relationships associated with demand could be developed.

Of the specific socio-demographic and visit factors investigated in this study, location of residence, age, and type of group, appeared to be most consistently related to preservation and recreation orientations of park visitors. These factors have previously been studied as explanatory factors associated with variations in recreation activity preferences (Field and O'Leary, 1973; Hendee *et al.*, 1971; McCool, 1976, 1978; Romsa, 1971; Schinkel, 1980). In addition to providing support for these associations, the

present study has also demonstrated the broader relevance of these factors in contributing to variations in two other behavioural variables, namely, perceptions of park purpose and preferences for management programmes. By replicating and extending these findings, the study results provide further justification for the conclusions of McCool (1978) and Schinkel (1980) that the location of residence variables is a particularly relevant consideration for recreation development strategies, and the contention of Field and O'Leary (1973) that the social group variable is an important factor in the understanding of recreation behaviours.

The study also provided a replication of Jackson's (1980:190) basic model by supporting the idea that "socio-demographic variables are major factors in recreation activities and use patterns of a specific resource, which in turn shapes attitudes concerning what is considered desirable and appropriate for development." Each of the four socio-demographic variables employed in this study was found to be related to activity preferences; and, when associations between pairs of indicator variables were assessed, the activity preferences and management preference variables were found to have the strongest correlations when compared to other variable pairs.

In addition, some support was found for the incorporation of other variables into this model. Park visit characteristics were also identified as major factors in

recreation activity preferences, suggesting that these may be worthy factors to assess in future studies where behaviours with regard to specific sites or types of sites may be of interest. In particular, variables such as type of visit (day-use/camping), visit frequency (repeat/first-time), and type of destination have received relatively little attention in previous research and the findings indicate that these factors would be worthy of consideration when attempting to explain recreation behaviours. A more detailed investigation of the role of these factors would appear warranted, particularly since they have considerable managerial relevance.

Another feature of the proposed model was the incorporation of perceptions as an additional factor in shaping activity preferences and preferences for management programmes. The relationship of perceptions and activity preferences was viewed as reciprocal on the basis of previous research, and this association received a moderate degree of support in the present study. As outlined in the review of literature, activity preferences have been employed as indicators of perception of place (Lee, 1972; Cheek and Field, 1977; McCool, 1978), although a direct assessment of the degree of association between these variables was not undertaken in previous studies. By demonstrating a moderate degree of support for this relationship, the present study has provided some empirical evidence supporting the contention that activity preferences

constitute valid indicators of perception of place.

This analysis focused on visitors' perceptions of park purpose and activity preferences as defined along a preservation-recreation dimension. A stronger understanding of the nature of these two variables, as well as their association would be gained by applying both associational and correlational analyses to additional behavioural dimensions, such as perceptions of social interaction and social behaviours, and perceptions of visitor impacts and resource-related behaviours. In addition to providing further information concerning the validity of activity preferences employed as indicators of perception, such research would also contribute to an understanding of behavioural factors underlying site-related activity preferences.

In contrast to the perception-activity preference association, the relationsship of perception and management preferences, which had received little support in previous studies, again appeared to be weak in the present investigation. Therefore, this aspect of the association between perceptions and management preferences requires re-evaluation and further study, and possible removal of the relational arrows between the two variables in the model. A previous study (Hendee *et al.*, 1968), which reported an association between these two variables employed a broad range of items which likely provided a finer discrimination and allowed for greater variations in responses among

respondent sub-groups. The limited range of items employed in the present study, and that of Echelberger *et al.*, (1974), may have contributed to the reported lack of association. Research related to this topic appears to be relatively scarce to date, and specific research addressing the relationship of these variables does appear warranted to attempt to clarify this issue.

F. Study Conclusions

The present study has employed a behavioural approach in examining the preservation-recreation orientations of park visitors. The preservation-recreation distinction has been widely cited in park planning and resource management literature, and this study has attempted to apply this conceptualization to the analysis of park visitors' views and behaviours.

Three types of orientation indicators were employed in the study: perceptions, activity preferences, and management preferences. A number of socio-demographic and park visit factors were examined to see if they accounted for variations in preservation-recreation orientations.

It was concluded that this approach appeared to have merit since the results demonstrated that variations in orientations were associated with different characteristics of park visitors. These findings were considered to be of practical relevance since it was determined that the types of user group distinctions made in the study were

managerially relevant, and constituted a useful contribution to understanding park-related behaviours and views in the two study parks, and possibly in the Alberta Provincial Park system as a whole. Furthermore, by focusing on user-groups characteristics, the study has provided basic data about the park clientele which could be incorporated into the development of informational and promotional communications programmes for the two parks.

With regard to theoretical implications, it was concluded that the study findings contributed to an understanding of one behavioural dimension (preservation-recreation) and some factors associated with that dimension in the park context. The study also appeared to have merit in extending the findings of previous research to encompass additional variable relationships, and in providing a more direct analysis of the relationships between the three indicator variables than had been previously undertaken.

The type of behavioural information provided by the study results constitutes one aspect of the multi-faceted knowledge required for effective recreation resource planning (Driver, 1976). Furthermore, the preservation-recreation distinction encompasses just one dimension along which resource users' behaviours and views may vary. This perspective indicates the complexity of planning considerations, and this is further born out by the nature of the study results and planning implications.

Behavioural information alerts planners to variations in user group views and behaviours, and although such knowledge is unlikely to make planning decisions any easier to formulate, it will hopefully result in planning concepts which are more sensitive to the needs and desires of the user clientele, and more effective in ensuring the benefits and satisfactions which are the ultimate goals of recreation resource management.

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VII. APPENDIX A

SURVEY QUESTIONNAIRES:

DINOSAUR AND WRITING-ON-STONE PROVINCIAL PARKS

DINOSAUR PARK VISITOR SURVEY

In order to serve you better, Alberta Recreation and Parks would like to find out some of your views and opinions about Dinosaur Provincial Park. We would appreciate it if you would select <u>one adult member of your group</u> to answer this questionnaire. It takes just a few minutes to complete and may be filled out at any time during your visit.

Please use a check (✓) to indicate your answer to each question. All replies are treated as confidential.

A member of our staff will collect your completed questionnaire as you leave the park. If a staff member is not present, the questionnaire may be placed in the survey box located at the park exit.

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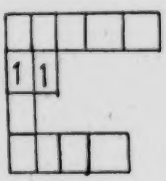

ARRIVAL TIME: Weekend 1 ☐
Weekday 2 ☐

DATE: _____

Section 1: This section of the questionnaire requests information concerning your group and their visit to the park.

1. How long do you intend to stay in the park?

☐ Day visit only
(Please estimate the number of hours) ____ hours

☐ Overnight camping
(Please state the number of nights) ____ nights

☐ Don't know for sure.

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2. Is this park your destination or a stopover? (Check ONE only)

1 ☐ ...Main Destination
2 ☐ ...One of Several Destinations
3 ☐ ...Stopover on the way to another area

☐

3. Which of the following best describes your group?

1 ☐ ...Family group
2 ☐ ...Group of friends
3 ☐ ...Organized group (eg. club, team)
4 ☐ ...Single person
5 ☐ ...Other (Please explain) _____

☐

4. During this visit, how many people are there in your group in each of the following age categories?(NOTE: Please include yourself in the total).

NO. OF PERSONS	NO. OF PERSONS
____ 14 years and younger	____ 35 to 44 years
____ 15 to 19 years	____ 45 to 64 years
____ 20 to 34 years	____ 65 years and older

☐☐☐☐
☐☐☐☐
☐☐☐☐

Section 2: This section of the questionnaire requests information concerning your own experiences and your views about the park.

1. Is this your first visit to this park?

1 ☐ ...Yes
2 ☐ ...No

☐

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If no, how often have you visited the park in the past?
(Please check (✓) ONE only)

- ☐ A few times before (1 to 3 times)
- ☐ Several times in past years
- ☐ On a regular basis

☐

2. How did you first become aware of this park?
(Please check (✓) ONE only)

1 ☐ ....Newspaper/Magazine
2 ☐ ....Radio/TV
3 ☐ ....Friend/Relative
4 ☐ ....Road Map
5 ☐ ....Government publication
6 ☐ ....Travel organization
7 ☐ ....Have known about this park for a long time
8 ☐ ....Other (Please explain) _____

☐

3. Have you had the chance to take advantage of any of the following interpretive or naturalist services? Please check (✓) those activities in which you have taken part on this visit, or on a previous visit.

	Yes, on this visit	Yes, on a previous visit
1. Gone on a guided bus tour	☐	☐
2. Gone on a guided walk	☐	☐
3. Attended an evening programme	☐	☐
4. Walked on the self-guided Badlands Interpretive Trail	☐	☐
5. Visited exhibits	☐	☐

☐
☐
☐
☐
☐

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4. Different parks are managed for different purposes. Which of the following do you consider are <u>the most important</u> for management of Dinosaur Park? Please check (✓) TWO answers.

1. To protect an area of outstanding scenic beauty ..... ☐
2. To provide camping facilities ..... ☐
3. To provide a chance to learn about park resources ..... ☐
4. To protect plants and animals that are native to Alberta ..... ☐
5. To preserve significant features such as fossils ..... ☐
6. To attract tourists ..... ☐
7. To provide outdoor recreation opportunities (eg. hiking, fishing, canoeing) ..... ☐

5. Different people have different ideas about what is interesting in Dinosaur Park. How interesting <u>to you personally</u> are EACH of the following features in <u>this</u> park? If you <u>have not seen</u> a feature, please check the column "Have not seen".

	VERY INTERESTING	SOMEWHAT INTERESTING	NOT VERY INTERESTING	HAVE NOT SEEN
1. Views overlooking the valley	☐	☐	☐	☐
2. John Ware's cabin	☐	☐	☐	☐
3. Dinosaur fossils	☐	☐	☐	☐
4. The badlands	☐	☐	☐	☐
5. The river banks	☐	☐	☐	☐
6. The prairie	☐	☐	☐	☐
7. Park plants and wildlife ...	☐	☐	☐	☐
8. Scientific research	☐	☐	☐	☐
9. Fossil exhibits	☐	☐	☐	☐

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6. How important <u>to you personally</u> are EACH of the following activities in <u>Dinosaur Park</u>?

		VERY IMPORTANT	FAIRLY IMPORTANT	NOT VERY IMPORTANT	DON'T KNOW	
1.	Climbing in the badlands	☐	☐	☐	☐	☐
2.	Camping	☐	☐	☐	☐	☐
3.	Learning about park features such as plants, animals, and dinosaurs	☐	☐	☐	☐	☐
4.	Visiting with other people	☐	☐	☐	☐	☐
5.	Relaxing in the shade	☐	☐	☐	☐	☐
6.	Making a personal effort to protect park resources	☐	☐	☐	☐	☐
7.	Learning about the history and culture of the area	☐	☐	☐	☐	☐
8.	Playing field sports (such as frisbee, badminton)	☐	☐	☐	☐	☐
9.	Picnicking	☐	☐	☐	☐	☐

7. Recently, Dinosaur Park has been:
(Check (✓) ONE only)

1. Chosen for recreational development ..... ☐
2. Named as a Scientific Research Park ..... ☐
3. Named as a World Heritage Site ..... ☐
4. Paired with a "sister park" in Ontario ..... ☐
5. Don't know ..... ☐

☐

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8a) Are you aware that there is a Natural Preserve area in Dinosaur Park?

Yes 1☐ .... (If yes, please complete Question 8b)
No 2☐ .... (If no, please go to Question 9)

☐

8b) There are many possible reasons for having a Natural Preserve. How important do you consider each of the following as reasons for setting aside the Natural Preserve in Dinosaur Park?

		VERY IMPORTANT REASON	FAIRLY IMPORTANT REASON	NOT VERY IMPORTANT	DON'T KNOW	
1.	To protect people from dangers (such as heat, getting lost)	☐	☐	☐	☐	☐
2.	To maintain a totally natural area by keeping people out altogether	☐	☐	☐	☐	☐
3.	To set aside an area for future expansion of the campground	☐	☐	☐	☐	
4.	To protect dinosaur fossils	☐	☐	☐	☐	☐
5.	To stop people from wearing away the rocks	☐	☐	☐	☐	☐
6.	To provide an area for scientific research	☐	☐	☐	☐	☐

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9. In parks such as Dinosaur, choices must be made about what is provided in the park. Considering that certain things may cost money, or may be restricted, what importance do you feel park management should place on the following?

	A GREAT DEAL OF IMPORTANCE	SOME IMPORTANCE	SAME AS NOW	LITTLE IMPORTANCE	NO IMPORTANCE	DON'T KNOW	
1. Allowing visitors to walk freely in the badlands as long as they register with the park staff	☐	☐	☐	☐	☐	☐	☐
2. Providing more camping spaces in the park	☐	☐	☐	☐	☐	☐	☐
3. Showing visitors how they could avoid damaging the park resources	☐	☐	☐	☐	☐	☐	
4. Providing more self-guided interpretive (nature) trails	☐	☐	☐	☐	☐	☐	☐
5. Providing an open field suitable for sport activities	☐	☐	☐	☐	☐	☐	☐
6. Providing guided tours to more areas of the park	☐	☐	☐	☐	☐	☐	
7. Telling visitors more about the purpose of the Natural Preserve	☐	☐	☐	☐	☐	☐	
8. Removing camping from the park	☐	☐	☐	☐	☐	☐	☐
9. Allowing organized trail rides (by horse) into the badlands	☐	☐	☐	☐	☐	☐	☐
10. Extending the road system so that people can drive to more areas of the park	☐	☐	☐	☐	☐	☐	

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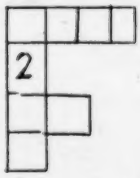
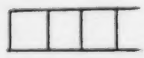
Section 3: This last section requests general information about the person who answered the questionnaire. This information will help us learn more about the people who visit Dinosaur Park. (Please remember that all replies are held in strictest confidence).



1. What is your age? _____ years

2. Sex
   1 ☐ .... Male
   2 ☐ .... Female



3. Where is your present home?

   _____ _____
   Village, Town, or City Province or State

4. What is the highest level of education that you have completed? (Check (✓) ONE only)

   1 ☐ .... Grade School (Grades 1-8)
   2 ☐ .... Some high school or vocational school
   3 ☐ .... Completed high or vocational school
   4 ☐ .... Some University, College, or Technical school
   5 ☐ .... Completed University, College, or Technical school
   6 ☐ .... Trade School
   7 ☐ .... Other (Please explain) _____

5. Which one of the categories below best describes your total family income before taxes (check (✓) ONE only)

   1 ☐ .... $10,000 or less
   2 ☐ .... $10,000 to $20,000
   3 ☐ .... $20,000 to $30,000
   4 ☐ .... $30,000 to $35,000
   5 ☐ .... $35,000 or more

COMMENTS: Please use the following page to write down any other comments you may have concerning this park.

WRITING-ON-STONE PARK VISITOR SURVEY

In order to serve you better, Alberta Recreation and Parks would like to find out some of your views and opinions about Writing-on-Stone Provincial Park. We would appreciate it if you would select <u>one adult member of your group</u> to answer this questionnaire. It takes just a few minutes to complete and may be filled out at any time during your visit.

Please use a check (✓) to indicate your answer to each question. All replies are treated as confidential.

A member of our staff will return to collect your completed questionnaire as you leave the park. If a staff member is not present, the questionnaire may be placed in the survey box located at the park exit.

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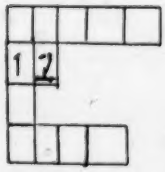

ARRIVAL TIME: Weekend 1 ☐
Weekday 2 ☐

DATE: _____

Section 1: This section of the questionnaire requests information concerning your group and their visit to the park.

1. How long do you intend to stay in the park?

☐ Day visit only
(Please estimate the number of hours) ____ hours

☐ Overnight camping
(Please state the number of nights) ____ nights

☐ Don't know for sure.

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2. Is this park your destination or a stopover? (Check ONE only)

   1 ☐ ... Main Destination
   2 ☐ ... One of Several Destinations
   3 ☐ ... Stopover on the way to another area

3. Which of the following best describes your group?

   1 ☐ ... Family group
   2 ☐ ... Group of friends
   3 ☐ ... Organized group (eg. club, team)
   4 ☐ ... Single person
   5 ☐ ... Other (Please explain) _____

4. During this visit, how many people are there in your group in each of the following age categories (NOTE: Please include yourself in the total)

NO. OF PERSONS		NO. OF PERSONS	
____	14 years and younger	____	35 to 44 years
____	15 to 19 years	____	45 to 64 years
____	20 to 34 years	____	65 years and older

Section 2: This section of the questionnaire requests information concerning your own experiences and your views about the park.

1. Is this your first visit to this park?

   1 ☐ ... Yes
   2 ☐ ... No

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If no, how often have you visited the park in the past?
(Please check (✓) ONE only)

- ☐ A few times before (1 to 3 times)
- ☐ Several times in past years
- ☐ On a regular basis

☐

2. How did you first become aware of this park?
(Please check (✓) ONE only)

1 ☐ .... Newspaper/Magazine
2 ☐ .... Radio/TV
3 ☐ .... Friend/Relative
4 ☐ .... Road Map
5 ☐ .... Government publication
6 ☐ .... Travel organization
7 ☐ .... Have known about this park for a long time
8 ☐ .... Other (Please explain) _____

☐

3. Have you had the chance to take advantage of any of the following interpretive or naturalist services? Please check (✓) those activities in which you have taken part on this visit or on a previous visit.

	Yes, on this visit	Yes, on a previous visit	
1. Gone on a guided walk	☐	☐	7
2. Attended an evening programme	☐	☐	7

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4. Different parks are managed for different purposes. Which of the following do you consider are the most important for management of Writing-On-Stone Park? Please check (✓) THREE answers.

1. To protect an area of outstanding scenic beauty ..... ☐
2. To provide camping facilities ..... ☐
3. To provide a chance to learn about park resources ..... ☐
4. To protect plants and animals that are native to Alberta ..... ☐
5. To preserve significant features such as Rock Art ..... ☐
6. To attract tourists ..... ☐
7. To provide outdoor recreation opportunities (eg. hiking, fishing, canoeing) ..... ☐

5. Different people have different ideas about what is interesting in Writing-On-Stone Park. How interesting to you personally are EACH of the following features in this park? If you have not seen a feature, please check the column "Have not seen".

	VERY INTERESTING	SOMEWHAT INTERESTING	NOT VERY INTERESTING	HAVE NOT SEEN
1. Views overlooking the valley	☐	☐	☐	☐
2. North-West Mounted Police Outpost	☐	☐	☐	☐
3. Native Rock Art	☐	☐	☐	☐
4. The rocks (hoodoos)	☐	☐	☐	☐
5. The river banks	☐	☐	☐	☐
6. The prairie above the valley	☐	☐	☐	☐
7. Park plants and wildlife ...	☐	☐	☐	☐
8. Rodeo grounds	☐	☐	☐	☐
9. Sweetgrass Hills	☐	☐	☐	☐

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6. How important <u>to you personally</u> are EACH of the following activities <u>in Writing-On-Stone Provincial Park</u>?

	VERY IMPORTANT	FAIRLY IMPORTANT	NOT VERY IMPORTANT	DON'T KNOW	
1. Climbing in the hoodoos	☐	☐	☐	☐	☐
2. Camping	☐	☐	☐	☐	☐
3. Learning about natural park features such as plants and animals	☐	☐	☐	☐	☐
4. Visiting with other people	☐	☐	☐	☐	☐
5. Relaxing in the shade	☐	☐	☐	☐	☐
6. Making a personal effort to protect park resources	☐	☐	☐	☐	☐
7. Learning about the historical and cultural attractions of the area	☐	☐	☐	☐	☐
8. Playing field sports (such as frisbee, badminton)	☐	☐	☐	☐	☐
9. Picnicking	☐	☐	☐	☐	☐
10. Walking	☐	☐	☐	☐	☐

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7a) We would like to find out how good a job we have done in telling you about the Park Preserve. Are you aware that there is a Preserve area in Writing-On-Stone Park?

Yes 1 ☐ (If yes, please complete Question 7b)
No 2 ☐ (If no, please go to Question 8)

7b) There are many possible reasons for having a Preserve. How important do you consider each of the following as reasons for setting aside the Preserve in Writing-On-Stone Park?

	VERY IMPORTANT REASON	FAIRLY IMPORTANT REASON	NOT VERY IMPORTANT	DON'T KNOW
1. To protect people from dangers (such as heat, getting lost)	☐	☐	☐	☐
2. To maintain a totally natural area by keeping people out altogether	☐	☐	☐	☐
3. To stop people from wearing away the rocks.	☐	☐	☐	☐
4. To protect Native Rock Art	☐	☐	☐	☐
5. To set aside an area for future expansion of the campground	☐	☐	☐	☐
6. To provide an area for research	☐	☐	☐	☐

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8. In parks such as Writing-On-Stone, choices must be made about what is provided in the park. Considering that certain things may cost money, or may be restricted, what <u>importance</u> do you feel park management should place on the following?

	A GREAT DEAL OF IMPORTANCE	SOME IMPORTANCE	SAME AS NOW	LITTLE IMPORTANCE	NO IMPORTANCE	DON'T KNOW	
1. Allowing people to visit the rock art on their own as long as they register with the park staff	☐	☐	☐	☐	☐	☐	☐
2. Providing more camping spaces in the park	☐	☐	☐	☐	☐	☐	☐
3. Showing visitors how they could avoid damaging the park resources	☐	☐	☐	☐	☐	☐	☐
4. Providing self-guided interpretive (nature) trails	☐	☐	☐	☐	☐	☐	☐
5. Providing an open field suitable for sport activities	☐	☐	☐	☐	☐	☐	☐
6. Telling visitors more about the purpose of the Preserve	☐	☐	☐	☐	☐	☐	7 ☐
7. Removing the rodeo grounds from the park	☐	☐	☐	☐	☐	☐	☐
8. Allowing organized trail rides (by horse) into the coulees	☐	☐	☐	☐	☐	☐	☐

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Section 3: This last section requests general information about the person who answered the questionnaire. This information will help us learn more about the people who visit Writing-On-Stone Park. (Please remember that all replies are held in strictest confidence).

1. What is your age? _____ years

2. Sex 1 ☐ Male
2 ☐ Female

3. Where is your present home?

_____ _____
Village, Town, or City Province or State

4. What is the highest level of education that you have completed? (Check (✓) ONE only)

1 ☐ .... Grade School (Grades 1-8)
2 ☐ .... Some high school or vocational school
3 ☐ .... Completed high or vocational school
4 ☐ .... Some University, College, or Technical school
5 ☐ .... Completed University, College, or Technical school
6 ☐ .... Trade School
7 ☐ .... Other (Please explain) _____

5. Which one of the categories below best describes your total family income before taxes (check (✓) ONE only)

1 ☐ .... $10,000 or less
2 ☐ .... $10,000 to $20,000
3 ☐ .... $20,000 to $30,000
4 ☐ .... $30,000 to $35,000
5 ☐ .... $35,000 or more

COMMENTS: Please use the following page to write down any other comments you may have concerning this park.